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MORRIS FISHBEIN, M.D.

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CONSERVATION OF TESTIS IN REPAIR OF HERNIA COMPLICATED BY UNDESCENDED TESTIS[*]

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BROOKLYN

An extensive review of the literature on undescended testis and a study of a small personal series of operative cases in the light of impressions gained have indicated that while much is known concerning the etiology, physiology, behavior and fate of the undescended testis, extensive generalizations are to be made with caution and final results in the individual case are hard to foretell.

The matter of etiology is very obscure and speculative and need not concern us at present. In the matter of pathology, the undescended testis furnishes equally unconvincing data. In general, it seems established that the abnormally placed testis may be normal or less than normal in size and consistency; rarely it is larger than normal. Spontaneous atrophy is said to be encountered more often after puberty than in childhood. Astley Cooper stated that all cryptorchids had loss of reproductive power, whereupon one of his pupils, a cryptorchid, committed suicide. Histologic examination showed evidence of spermatogenesis in both testes. However, in cases of bilaterally retained testes, the powers of reproduction are said to be markedly impaired and often entirely gone. When histologic changes have been observed in the retained testis, they have usually consisted in more or less atrophy and degeneration of the epithelial elements and a marked increase in the interstitial cells of Leydig, which are said to have an important influence in developing the secondary male characteristics.

The increased tendency of the undescended testis to become malignant does not seem proved in spite of the older teachings. Thus, in sixty-two cases of abnormally placed testis, Büdinger found only one case of malignancy, and during the same period he noticed eight cases in normally placed testes. In 1923, Tanner reported a case of bilateral teratoma testis of a carcinomatous type in a person with normally descended testes, and in 1915, Coley cited a case of bilateral abdominal malignant testes. Eccles reported the occurrence of maldescent of the testis 854 times in the examination of 74,800 patients with hernia; yet, in the entire series there was not a single case of malignancy. Also in forty cases of sarcoma of the testis observed during a period of twenty-five years previous to 1919, Cunningham had never seen a case of malignancy develop in an undescended testis. However, since that time (i. e., up to 1924), he had seen four cases and hence could make no logical deductions. Hinman emphasizes the susceptibility of the abnormally descended testis to malignancy and urges the necessity of operative intervention before puberty.

It would seem difficult to prove that malposition as such has any bearing on the development of malignancy; however, the undescended testis, particularly when resting in the inguinal canal or near the external ring, may present theoretical predisposition. Thus, it is constantly exposed to repeated trauma, irritation and pressure which could well in themselves tend to atrophy and which, unrelieved, might even predispose to malignant degeneration, just as chronic irritation unrelieved is apt to provoke malignancy elsewhere. The associated hernia for similar reasons may be a factor. Figures, it seems, have been cited to prove or disprove various contentions; whatever the truth may be regarding the tendency of the undescended testis to become malignant, the important point from the surgical standpoint is whether or not mobilization and replacement lessen any possible predisposition to malignant degeneration. Concerning this matter, there is no evidence that the testis which has been placed in the scrotum is unusually subject to the development of new growths. On the contrary, one is impressed with the rarity of malignant changes that have been noticed after the testis has been properly placed.

The problem of undescended testis is made easier by a brief reference to the anatomy involved. During fetal life an evagination of peritoneum, the processus vaginalis, is projected into the inguinal canal. The testis gradually descends from its original position below the kidney and migrates through the inguinal canal into the lower limits of the scrotal pouch, where it is held at birth or shortly after by the gubernaculum testis. With the complete descent of the testis, the processus vaginalis fuses throughout its inguinal and scrotal portion excepting at the lower end, where it forms the tunica vaginalis testis. Complete fusion of the process occurs only when complete descent of the testis has taken place. Hence, a congenital hernial sac is practically always found in association with a true undescended testis. It is obvious that the testis might be held anywhere between its original abdominal position and its lower scrotal destination. Thus, it may remain in the abdomen at the internal ring, in the inguinal canal or below the external ring. In some instances, aberrant fibers of the gubernaculum may be responsible for its position in the perineum, in the crural region or above the external oblique muscle (ectopia testis).

Up to 1898, when Bevan first described his very satisfactory operation for undescended testis, most patients were advised against operation owing to the generally poor results that followed failure to obtain satisfactory mobility and replacement of the testis. It was generally accepted that the undescended testis lacked the power of spermatogenesis and was ultimately destined either to complete atrophy or to malignant degeneration. Hence, more often than not it was sacrificed, especially as this procedure was said to render the accompanying hernia easier to repair.

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[*] Read before the Clinical Society of the Long Island College Hospital, April 15, 1925.

Cat. i.

Sacrifice of the testis is advocated in some rather recent reports. Thus, for example, the 1924 edition of Rose and Carless states: "Taking into consideration the discomfort occasioned by the condition as well as the risk arising from the tendency to malignant disease, there can be little doubt that the best method of treatment is the removal of the testicle." The practice has been rather general until comparatively recently, it seems from published reports.

Bevan's operation aims to secure a viable testis in the scrotal cavity and a repair of the associated hernia. It is based on the premise that the two main arteries of supply to the testis, the artery to the vas deferens and the internal spermatic artery, anastomose freely, and that it has been shown in the operation for varicocele and by laboratory experiments that either one may be ligated without interfering with the function and nutrition of the testis. Opposed to these assumptions are the findings of Koyamo and others, who found experimentally that ligation of the internal spermatic artery in dogs is often followed by a certain amount of degeneration of the parenchymatous elements. Likewise, reports by Mixter and others would indicate that while it is possible to cut the spermatic circulation and still maintain the viability of the testis, this can be done only with risk of subsequent atrophy in some cases.

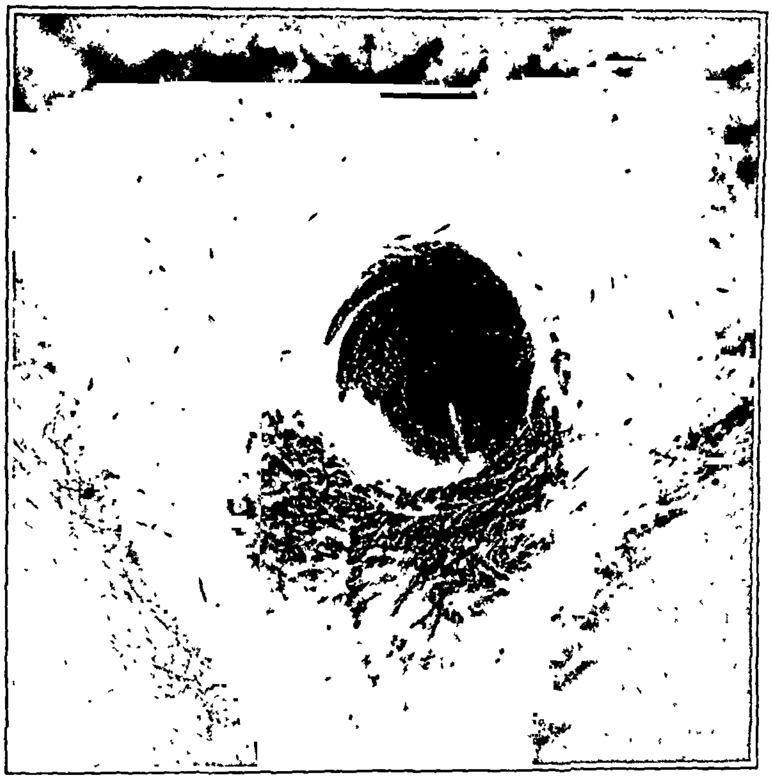

Fig. 1.—Medical student, aged 22. Operation, March 21, 1924. Release of inguinally placed, slightly undersized right testis without sacrifice of spermatic circulation. Appearance, April 2, 1925: Testis normal in size and consistency and well down in reconstructed scrotal pouch. Neurotic symptoms entirely relieved.

In my own small series of seven cases, the principles of Bevan have been followed. The usual inguinal hernial incision is made, the inguinal canal is exposed and the vaginal pouch is located and freed. The sac is incised high up and the testis is usually located without difficulty. The vaginal process of peritoneum is then divided just below the *internal ring* and *well above the* testis. The neck is carefully freed from the underlying cord and its structures, and ligated high up as in the ordinary herniotomy. The remainder of the peritoneum is then freed from the cord, and by this procedure more and more mobility is developed. Small fibrous bands about the internal ring or within the cord itself are further freed and cut and usually produce complete and satisfactory mobility. In exceptional cases, the spermatic vessels are found unusually shortened and must be divided to obtain adequate mobility, as suggested by Bevan. Finally, a pouch for the testis is prepared in the collapsed scrotum by blunt digital dissection. The testis is then placed in the newly formed scrotal cavity, where it should be free from even light tension. The inguinal region is closed as in any ordinary hernial repair, without cord transplantation.[1]

Table 1.—*Preoperative Data*

	No. of Cases
Patients operated on	7
Age at time of operation:	
7 years and under	3
18 years and above	4
Right testis involved	6
Left testis involved	1
Associated hernia present	7
Complications:	
Torsion of the cord requiring emergency operation	1
Strangulated hernia requiring emergency operation	1
History of strangulation	1
Evidences of malignancy	0
Neurotic manifestations	4

Table 2.—*Operative Data*

	No. of Cases
Testis conserved	7
Herniotomy performed	7
Evidences of malignancy	0
Position and condition of testis:	
(*a*) Inguinal position	5
Slight atrophy (before puberty)	3
Slight atrophy (after puberty)	1
Marked atrophy (after puberty)	1
(*b*) Intra-abdominal position	2
Postpuberty cases (*no atrophy*)	2
Bevan operation performed:	
Without sacrifice of the spermatic circulation	5
With sacrifice of the spermatic circulation	2
Position of testis at end of operation:	
Midscrotal	4
Low scrotal	3

Table 3.—*"Follow-Up" Data*

	No. of Cases
Evidences of recurrent hernia	0
Evidences of malignancy	0
Position of testis (4 months to 3½ years after operation):	
Midscrotal	1
Low scrotal	5
High scrotal	1
Size of testis:	
(*a*) Slight atrophy *following the* Bevan *operation* with sacrifice of spermatic circulation	2
(*b*) No change or slight increase following the Bevan operation without sacrifice of the spermatic circulation	4
(*c*) Marked increase following the Bevan operation *without* sacrifice of the spermatic circulation	1
Neurotic *manifestations* relieved (postpuberty cases)	4.

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[1] A full description with illustrations of the steps in the operation can be found in the article by Bevan in Chapter LXI, Volume IV, of Keen's Surgery.

The important facts concerning the seven cases studied are given in the accompanying tables.

COMMENT

In a series of seven cases of undescended testis, malignant change was not encountered.

Slight atrophy was quite generally noted, regardless of age, when the testis occupied an inguinal position.

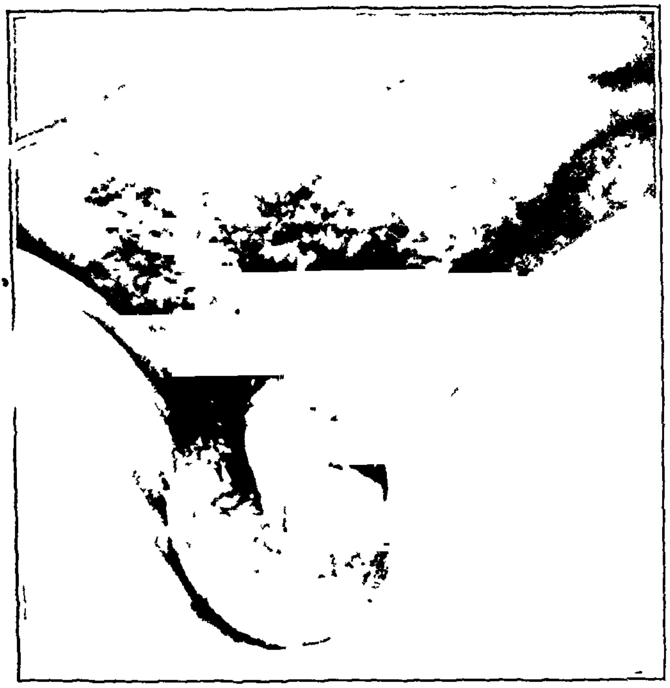

Fig 2—Italian laborer, aged 37 Previous unsuccessful operation elsewhere Operation, Nov 17, 1924. Release of badly scarred and markedly atrophic left testis from inguinal region without sacrifice of spermatic circulation Appearance, April 2, 1925: Testis in midscrotal position showed marked increase in size and consistency. Neurotic symptoms entirely relieved.

It is interesting that atrophy was not present in the two postpuberty cases in which the testis occupied an intra-abdominal position.

Replacement in the scrotal cavity seemed to exert a generally beneficial influence on the size and consistency of the testis in all patients excepting two, aged 7 and 18 years, respectively, in whom the spermatic circulation had been sacrificed and slight atrophy ensued. Enough time has not yet elapsed to determine whether the changes will be permanent. An unusual increase in size followed in one patient, aged 37, in whom previous attempt at reduction at another hospital had failed completely. In this case, it was possible to liberate a markedly atrophic and badly scarred left testis from its inguinal position and replace it in the scrotum. In the course of four months, the testis had practically regained its normal size and consistency.

The association of hernia with the undescended testis was present in all cases and herniotomy was performed in every instance without sacrifice of the testis. The series, though small, emphasizes the dangers that are lurking in a patient with undescended testis. Thus, strangulated hernia and torsion of the cord, respectively, occurred in two postpuberty cases, while there was a history of strangulation in one prepuberty case.

Neurotic manifestations ranging from slight worry and mild depression to symptoms approaching frank sexual neuroses were present in all the postpuberty cases before operation. These were promptly relieved by operation.

A few of the more striking cases are presented in the accompanying illustrations.

SUMMARY

The tendency of the undescended testis to become malignant is overestimated. When the accompanying theoretical factors of pressure and unrelieved irritation persist, the abnormally placed testis may atrophy and degenerate, but malposition in itself is probably not the factor that produces atrophy or malignancy. Certainly, there is no evidence to show that a previously undescended testis that has been properly placed has any greater malignant potentialities than the testis that has always had a normal position.

Undescended testis is, by virtue of the anatomy involved, practically always accompanied by a congenital hernia. This fact predisposes to serious life-endangering complications, such as strangulated hernia and torsion of the cord.

Careless and indiscriminate sacrifice of the undescended testis is not warranted, since the vast majority of improperly placed testes, including the abdominal ones, can be brought down satisfactorily and therefore do not interfere with a proper hernial repair. In a limited number of cases, and if otherwise impossible to mobilize, it is justified to sacrifice the spermatic circulation to obtain satisfactory mobilization. When this is done, there is an appreciable risk of atrophy of varying degree.

Even the atrophic testis with questionable spermatogenic function should be conserved for the influence

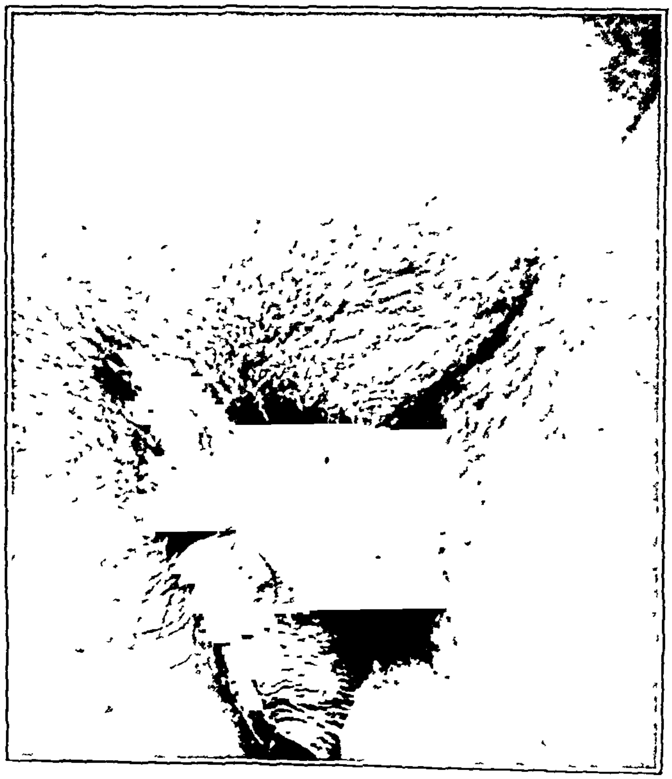

Fig. 3—Nonoperative case Syrian, aged 68 Left inguinally placed testis has undergone a marked atrophy from constant exposure to pressure and trauma until at present it is no larger than an ordinary almond. The atrophy is not apparent on inspection on account of the associated hernia

it may exert on the development of the secondary sex characteristics. Furthermore, continued nutrition and development of any testis, whether normal or
is doubtless best favored by placing it in
nearly normal as possible.

Operative intervention should be recommended before puberty to facilitate normal physiologic development. Besides, when the operation is undertaken relatively early, serious complications are less likely to occur.

In postpuberty cases, the same general principles governing in the prepuberty cases hold. Furthermore, the testis should be brought down for the stabilizing influence and moral effect that knowledge of its presence in the reconstructed scrotal cavity has on the patient with an associated neurosis. This indication is further emphasized when one considers the increased efforts that are being made experimentally and clinically in the way of gonadal transplants, both animal and human, none of which have yet produced results comparable to those of the reclaimed undescended testis.

Finally, it is at all times considered good surgical judgment and treatment to conserve as much of the structure and function of an organ as is compatible with the welfare and safety of the patient.

2 Sidney Place.

CYSTINURIC LITHIASIS

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AND
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MILWAUKEE

One hundred and fifteen years ago, Wollaston[1] gave the first description of cystin. He identified a bladder stone as being composed of a protein derivative which differed essentially from the ordinary urinary stones composed of crystalline salts. His original description applies very becomingly to the specimen that was obtained in this case. He said, in part:

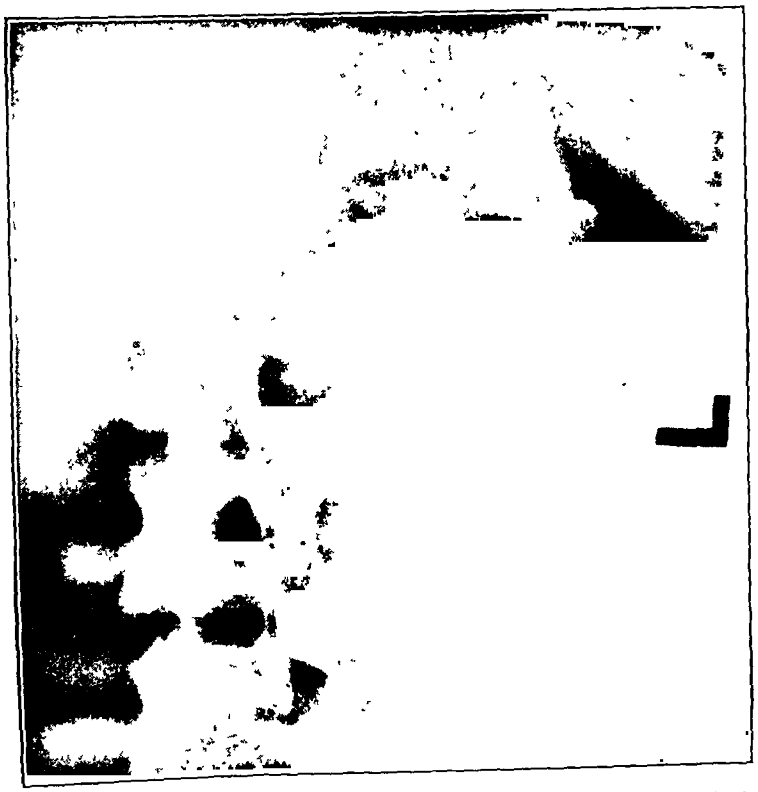

Fig. 1.—Left kidney region: stones in pelvis. The shadow of the largest stone, in view of its size, is of relatively slight density. This stone, on analysis, proved to consist largely of cystin.

> In appearance these calculi resemble more nearly the triple phosphate of magnesia than any other calculi, but they are more compact than that compound is usually found to be, not consisting of distinct laminae, but appearing as one mass confusedly crystallized throughout its substance. . . . These crystals have a yellowish semitransparency; and they have also a peculiar glistening luster like that of a body having a high refractive density.

Since Wollaston's discovery in 1810, there have been only 181 cases of cystinuria reported, 124 of which were complicated with stone formation. Among 600 cases of urinary calculi observed by Nakano,[2] in Japan, cystin calculi were present in seven cases. From these data one would deduce that it is an exceedingly rare condition, but in reality it has a much higher incidence, as many cases that are symptomless are overlooked. Even when complicated with stone, they are not always recognized by urinalysis. The appearance of the stone may be disguised because of mixture of other deposits, and again, their resemblance to the commoner triple phosphate concretions may be confusing. Cystin is present much more frequently in the urine and calculi of dogs than of man.

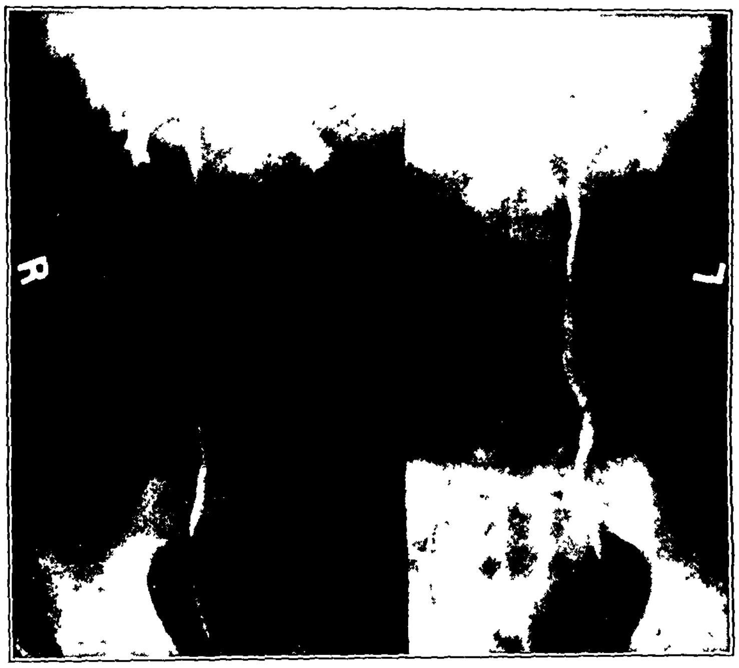

Fig. 2.—Ureteropyelograms locating shadows in kidney pelvis and demonstrating the large cystin stone contrasting with the 15 per cent. sodium iodid solution, owing to its lesser density.

Cystin is the only sulphur-containing amino-acid. It is present in the protein of most of our foods and occurs in considerable amounts in eggs. It is present in a high percentage in keratin and keratin-containing substances, such as hair, horn, nails and shells.

Cystin appears in the form of hexagonal leaves or rhombic crystals. It is levorotatory. It is insoluble in water and alcohol. It is soluble in concentrated mineral acids, but is much more readily soluble in alkalis.

ETIOLOGY

Stadthagen and Brieger[3] have advanced the theory that cystinuria is due to infection. They believe that the coincidence of cystinuria and constipation favor this theory. Wasserthal[4] noted frequent association of articular rheumatism and cystinuria, and suggested infection as the cause of both. Ebstein[5] treated a syphilitic patient with mercury and caused a disappearance of cystinuria. Beer[6] noted a case of cystinnephrolithiasis in which there was a colon bacillemia. On the other hand, the infectious theory is held to be incompatible with the fact that cystinuria lasts for a lifetime

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[1] Wollaston, W. H.: On Cystin Oxide: A New Species of Urinary Calculus, Phil. Tr., 1910, pp. 223-230.

[2] Nakano, H.: Atlas der Harnsteine, Leipzig, F. Beutiche, 1925, pp. 5, 6.

[3] Stadthagen, M., and Brieger, L.: Ueber Cystinurie, nebst Bemerkungen ueber einen Fall von Morbus maculosus werlhofii, Berl. klin. Wchnschr. **26**: 334-347, 1889.

[4] Wasserthal: Beitrag zur Kasuistik und Aetiologie der Cystinurie, Centralbl. f. Harn- und Sexualorgane **15**: 121-131, 1904.

[5] Ebstein, W.: Ein Paar neuer Falle von Cystinurie, Deutsch. Arch. f. klin. Med. **23**: 138-151, 1879; Ein Fall von Cystinurie, ibid. **30**: 594-602, 1881-1882.

Kahn and Rosenbloom[7] give a very fascinating account of the development of our knowledge of the chemistry and metabolism of cystin, which reflects the great interest in the subject during recent years. Cystin is a product of catabolism, but it does not appear in the urine as such, being normally broken down to its sulphur derivatives. It is derived both from endogenous and exogenous protein.

It is not known in which organ the error in metabolism responsible for cystinuria takes place. The liver has been accused of being the seat of this incomplete metabolism, and to substantiate this theory, it has been pointed out that cystinuria accompanies cases of phosphorus poisoning and alcoholism. Cystin was found in the blood by Müller[8] in a patient who had attacks of renal colic and passed small cystin calculi. This patient suffered with a "stubborn urticaria from December, 1902, to February, 1903." A cystin crystal was found in the blood during this period, and the presence of this abnormal constituent was given as the probable cause of the urticaria. Other investigators have identified cystin in the liver, spleen and muscle.

Neuberg[9] places cystinuria in three groups: (1) the mild type, in which there is a tolerance for tyrosin, cystin and asparagenic acid; (2) the type in which cystin is excreted and there is present diminished power to oxidize other amino-acids on feeding; (3) the type of cases in which the disturbance of the intermediate protein metabolism is so advanced that besides the excretion of cystin, other amino-acids are spontaneously excreted, such as tyrosin and leucin.

That cystinuria is due to some defect in the intermediary metabolism of amino-acid is shown by the fact that van Amstel[10] has described a case of alkaptonuria and cystinuria in one patient. At times, various diamins are associated with cystin in the urine. Some of the basic nitrogenous substances known as ptomains, putrescin and cadaverin, have been isolated in the urine and feces of cystinuric patients.

Folin and Alsburg[11] fed patients cystin prepared from their own urine and found that it was not excreted in the urine. The cystin excreted in the urine is evidently not absorbed as such from the intestine, but must be absorbed in the form of a larger molecule, because cystin absorbed as such is oxidized. Bauman and Preusse and Jaffe[12] have produced artificial cystinuria by feeding the halogen compounds of benzene together with ethylcystin.

Heredity is a decidedly important factor. In Niemann's[13] series there were three pairs of brothers and one pair of sisters. Kretschmer's[14] patients were twin brothers. A number of authors have reported the occurrence of familial cystinuria, among them Marcet,[15] Civiale,[16] Toel,[17] Lenoir,[18] J. Cohn,[19] Strasser,[20] Teall,[21] E. Pfeiffer,[22] Lichtenstein,[23] Harnier,[24] Winternitz[25] and Southam.[26] The most striking report is that of Abderhalden,[27] which included five children in one family. One, a boy, aged 21½ months, died of inanition, and necropsy revealed all the organs infiltrated with numberless white points. In an examination of the spleen, these points were identified as cystin. Another child, a girl, aged 9½ months, and a third, a boy, aged 17 months, died in a similar manner. Two other children, boys, are living and have cystinuria. The urine of the mother contained no cystin. The urine of the paternal grandmother was free from cystin. The urine of the father contained a considerable amount of cystin, as did that of the paternal

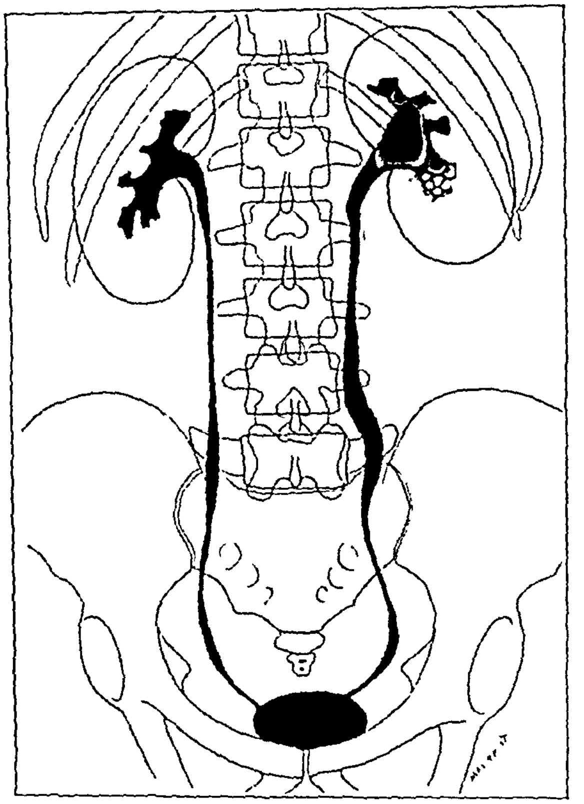

Fig. 3—Exact tracing of right and left ureteropyelograms with the stones mounted and grouped as in vivo The right side, free from stones, has a normal filling The left pelvis is full of stones, and there is evidence of obstruction in the dilated middle third of the ureter. *This stricture in the lower ureter and its consequent stasis is a predisposing factor in the formation of stones in the kidney pelvis.*

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[26] Southam, F A · Notes *on a Case of* Cystin Calculus Diagnosed Before Operation, Brit M J **2:** 817-818, 1876; Two Cases of Cystin Calculi, ibid **1:** *489 490,* 1907

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grandfather. Abderhalden states that there was a history of tuberculosis and gastro-intestinal disease on the paternal side of the family.

Males are more frequently affected than females. Niemann collected reports of forty-nine cases from the literature up to 1876. There were thirty-eight males and ten females; in one case the sex was not stated. Kretschmer collected reports of 106 cases up to 1916. There were sixty-five males and twenty-seven females; in fourteen cases the sex was not stated.

There seems to be no predilection in regard to age. The condition is apt to develop at any time. Whether it is ever present at birth is not known. Manby[28] reported the youngest case in an infant, aged only 12 months, who passed a small cystin stone. Sir Henry Thompson[29] observed the oldest case in a man, aged 84.

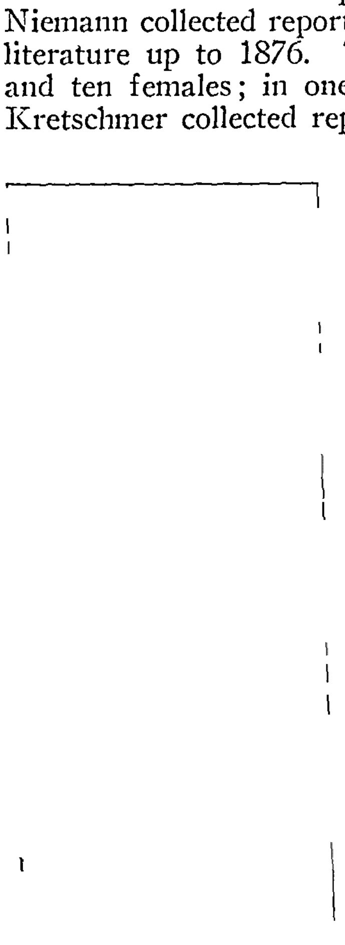

Fig. 4. — Roentgenographic appearance of some of the smaller stones after removal The one at the top is largely cystin; the lower ones, while smaller, cast a better shadow because of a higher content of calcium salts.

DIAGNOSIS

The diagnosis rests in the identification of cystin in the urine. This finding, together with the demonstration of stone anywhere in the urinary tract, leads to a diagnosis of cystin calculi. The finding of stones is simple if they are impure; if the stones are pure cystin, they are more difficult to demonstrate with the roentgen ray because of their relatively low density. The urine is usually acid, but may be neutral or even alkaline. The degree of alkalinity required for solution of cystin varies in different urines The urine that contains cystin, if allowed to stand, gives off a sulphurous odor due to bacterial decomposition of the cystin. In the sediment the crystals appear as six sided plates of variable size, with three pairs of parallel sides and very frequently a notch in one side. The addition of a drop of ammonia brings about solution quickly. On evaporation, or on the addition of acetic acid, the crystals reprecipitate.

TREATMENT

The same principles of treatment as applied to calculi in general are applied to cystin calculi, and while these stones are more apt to recur, prevention is possible if proper measures are carried out. Removal of infection, both local and distant foci, copious water intake, and establishing free drainage especially by the dilation of the ureteral strictures and removal of obstruction in the lower urinary tract must be accomplished. Litholapaxy is feasible in cases of bladder stone. Kretschmer successfully crushed a large cystin bladder stone in one case, and three smaller stones in another, within the course of a year. Other instances in which the procedure has been successfully carried out have been reported. Added to these measures, restriction of protein and the administration of alkalis are indicated.

Klemperer and Jacoby[30] were the first to advise alkali treatment for cystinuria. They found that on a test diet the proportion of cystin in the urine became much reduced when the patient refrained from protein in the food. The amount also decreased remarkably by the administration of from 6 to 10 gm. daily of sodium bicarbonate. Smillie noted that a patient on a nitrogen intake of 10 gm. a day required more sodium bicarbonate to keep the urine free from cystin than is well borne by the stomach. The administration of alkalis does not prevent its formation, but merely makes it soluble in the urine. The only reliable test for determining the absence of cystin from the urine is the microscopic test of the sediment.

To Crowell[31] belongs the credit for bringing about the first successful disappearance of cystin nephrolithiasis by alkaline treatment. During the period from January, 1922, to June, 1923, he caused a dissolution of bilateral renal calculi by oral administration of alkalis and pelvic lavage with 1 per cent. solution of mercurochrome-220 soluble, as proved by successive roentgenograms.

In a case of cystinuria uncomplicated with stones, or one in which stone has been removed and all the other predisposing factors mentioned previously have been eliminated, the preventive treatment should consist in strict limitation of protein intake, moderate doses of alkalis, and a copious water intake.

REPORT OF CASE

A high school boy, aged 16, who entered Milwaukee Hospital, Feb 26, 1925, in the service of Dr. Seeger, referred by Dr. Hausmann of Kewaskum, Wis, was acutely ill with pain in the right lumbar region. The diagnosis apparently rested between appendicitis and renal colic

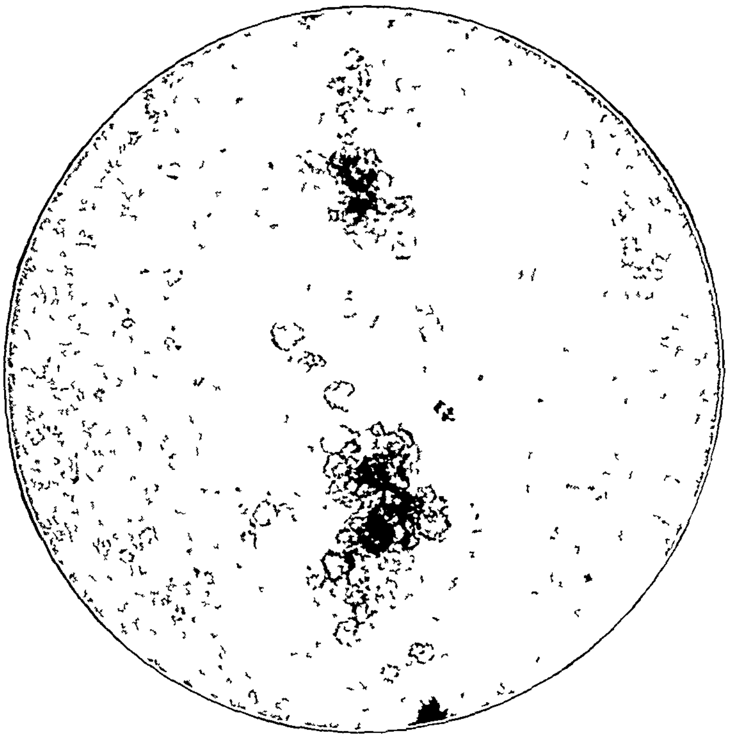

Fig 5 —Cystin crystals of varying sizes, singly and in groups, appearing in urinary sediment, reduced from a photomicrograph with a magnification of 900 diameters

The family and personal history were irrelevant except that a maternal uncle had had a kidney stone removed three years before The patient was of the blond, blue-eyed type One year before he had had an attack of severe left lumbar pain, lasting two days.

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[28] Manby, F. E: Cystine, Brit M J 1: 58 1875

[29] Thompson, Henry Tr Path Soc London **21:** 272, 1870

[30] Klemperer, G, and Jacoby, M: Zur Behandlung der Cystinurie, Therap d Gegenw **55:** 101 103 (March) 1914; abstr, J. A M A **62:** 1207 (April 11) 1914

[31] Crowell, A J Cystin Nephrolithiasis: Report of a Case with Roentgenographic Demonstration of Disintegration of Stone by Alkalization, Surg, Gynec & Obst. **38:** 87 91 (Jan) 1924

The patient was awakened at 2 a. m. on the day of admittance with severe pain in the right lumbar region. There were nausea, vomiting and slight fever. The pain lasted until 7 a. m., when a hypodermic of morphin was given. Three hours later on arrival at the hospital, the leukocyte count was 18,550. There was moderate rigidity and tenderness over the right lower quadrant of the abdomen. Urinalysis showed albumin and a large number of red blood cells.

The following day, the patient was referred to the urologic service of Dr. E. A. Fletcher. The right lumbar pain did not return, the fever was absent, and the leukocyte count dropped to 10,850. The symptoms no doubt were due to the passage of gravel from the right ureter. Roentgenograms demonstrated nothing on the right side, but a cluster of stones in the region of the left pelvis. There was one large shadow of rather slight density and a number of smaller ones. The urinalysis showed albumin, red blood cells, colon bacilli and large numbers of cystin crystals. These findings led to a diagnosis of cystin calculi.

Ureteral catheterization, on both sides, revealed a urine containing a few red blood cells. There was also slightly impaired function on both sides. On the right side, the impairment of function was probably due to the recent renal colic. A pyelogram on the left located the stones filling the pelvis and lower calices. The ureter showed considerable dilatation in its middle third, suggesting a long standing obstruction probably due to stricture. At a later sitting, a pyelogram done on the right was entirely normal. The blood sugar estimation was 75 mg.; the nonprotein nitrogen, 32.7 mg.; the urea nitrogen, 18.5 mg.; the creatinin, 1.7 mg., and the uric acid, 3.72 mg. Urine from both kidneys showed *B. coli.*

March 3, Dr. Seeger removed the stones from the kidney by a posterior pyelotomy. Recovery was uneventful.

For three days following operation, no cystin appeared in the urine. Then the patient went on the regular hospital diet, and cystin reappeared in the urine. Ten grain (0.65 gm.) doses of sodium bicarbonate were administered every three hours, and the urine showed only an occasional cystin crystal.

Eighteen days after operation, the patient left the hospital with directions to take sufficient sodium bicarbonate and citrocarbonate to keep the urine alkaline to litmus paper, to drink from eight to ten glasses of water a day, and to refrain from eggs, meat and cheese.

The urine has been examined in six members of the family, including the maternal grandfather, the father, the mother, two sisters and a brother; no cystin has been found. The urine of the father and the brother contained red blood cells on two occasions.

April 20, 1925, the patient returned for examination. He had gained 20 pounds (9 kg.), had no pain, and felt very well. The urine was alkaline in reaction, but contained large numbers of cystin crystals.

Ureteral catheterization showed a few pus cells and a few *B. coli* on each side. The comparative function on the two sides, as measured by the phenolsulphonephthalein and urea excretion, was about 40 per cent. better on the normal right side. A number 12 wax bulb passed up the left ureter was obstructed 4 cm. from the bladder. Roentgenograms were negative.

SUMMARY

1. Cystinuria is an error of metabolism which is inborn and incurable.
2. This case of cystinuria was complicated with calculi. The calculi were multiple and mixed with other salts.
3. After operative removal of the stones, the cystinuria persists in this case, even in a urine alkaline to litmus, emphasizing the necessity of the microscopic test to determine the absence of cystin in the urine.
4. No other members of the family have been found to be affected by cystinuria, although the father and a brother had microscopic blood in the urinary sediment on two occasions.

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SINUSITIS AND SWIMMING

FURTHER OBSERVATIONS OF ETIOLOGIC FACTORS, WITH SPECIAL EMPHASIS ON MAN'S LACK OF ADAPTATION TO AQUATIC HABITS [*]

H. MARSHALL TAYLOR, M.D.
JACKSONVILLE, FLA.

In recent years, the advances in medicine along bacteriologic and immunologic lines have opened up such tremendous fields for research that they have to some extent overshadowed some other branches of medicine of paramount importance and tended to relegate them to the background. Biology, the fundamental study of all phenomena of life and its manifold relations, is one of the branches of science that cannot be ignored. We must always bear in mind, as Dendy [1] has said, "Man derives his existence from the same ultimate sources and is subject to the same natural laws as all the other living things with which he shares the earth."

The literature dealing with the subject of infections of the upper respiratory passages caused by swimming has to a large extent ignored the fact that man has few structural adaptations for an aquatic environment, but has in a large measure dealt with only the one etiologic factor, that of contaminated water.

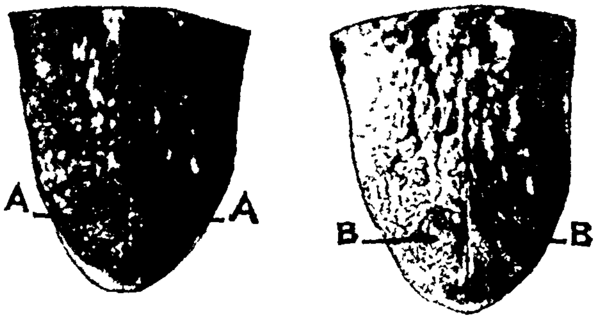

Fig. 1.—Anterosuperior portion of head of Alligator mississippiensis: *A, A,* external nares open as during respiration; *B, B,* nares closed.

My interest in other causative factors of sinusitis from swimming increased in the last few summers when I learned that the only pool a number of my patients had been patronizing was fed by a spring having a flow of 3,000 gallons a minute, while the only pool used by other patients had a flow of 30,000 gallons a minute. Chemicals, which are often alleged to be irritants to the nasal mucous membrane, were not used in either one of these pools on account of the low bacterial counts found after repeated examinations by the Florida State Board of Health. Bacterial examinations of samples collected from both of these pools on heavy bathing days did not show more than 150 bacteria per cubic centimeter, and showed no evidence of contamination. In other words, the patients coming under my observation bathed in relatively pure spring water, having a temperature of 71 F.

My purpose in mentioning these two pools, specifying the large amount and quality of water supplied and its relative degree of purity, is primarily to emphasize that factors other than contaminated water play a significant rôle.

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[*] Read before the American Laryngological Association, Washington, D. C., May 5, 1925.

[1] Dendy, A.: Outlines of Evolutionary Biology, 1913, p. 7.

Fenton[2] states that:

> Swimmers and divers introduce the following factors which interfere with the protective mechanism of the nasal mucous membrane: Destructive action of plain water upon cells, by osmosis, drawing out saline elements, causing edema and acidosis of cells, loss of ciliary activity and eventual cell death. This "irritative action of water" causes lowered local resistance. The specific protective substance of the sinus secretion is diminished and eventually lost by being forcibly washed away and later inhibited by the edema and chemical degeneration of the secretory cells.

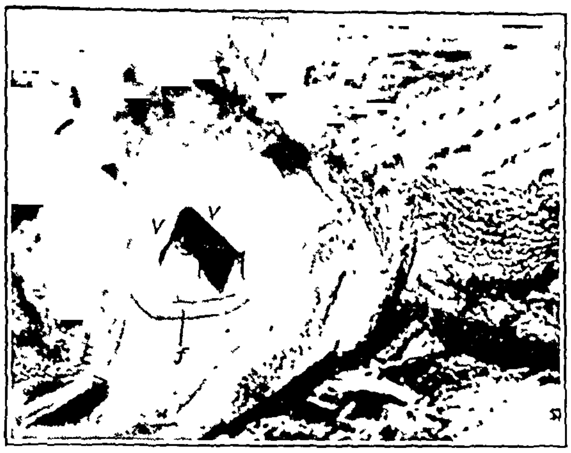

Fig. 2.—Interior of mouth of Alligator mississippiensis (after Reese): *f*, transverse fold at base of tongue; *v*, *v*, velum palatinum.

he experiences of others, as well as my own, have oused my interest in etiologic factors other than contaminated water, one in particular: man's lack of adaptation to aquatic habits. My review of the subject has taken on many and varied aspects and has brought to light several questions that seem to me worthy of consideration. It is not my present purpose to set forth any new discoveries but merely to summarize certain structural adaptations found among the animals whose normal habitat is water, with a view toward a better understanding of the condition in man.

It has occurred to me that sinus infections, secondary to swimming, evidently come from one or both of the following sources: Either foreign bacteria may gain entrance to the deeper portions of the nasal apparatus and conjoined structures; or bacteria normally and constantly present in this region may be allowed, by a lowered resistance on the part of the individual, to multiply to pathologic proportions.

Keeping these possibilities in mind, another question arises which originally led me to the investigations that I will summarize in this paper. Why is man so susceptible to sinus diseases, while lower animals breathing air as man does and living constantly in the water do not encounter these difficulties? What have air-breathing aquatic animals to protect them from sinus infection which man is so likely to contract when he places himself in their normal environment and practices their activities?

PROTECTION OF RESPIRATORY STRUCTURES IN AQUATIC ANIMALS

The plan of respiration for all air-breathing animals is fundamentally the same, there being no essential difference in the epithelium lining their respiratory tracts. It is the usual stratiform flat epithelium lining the nasal vestibule which gradually assumes the structure of true respiratory mucous membrane; that is, the stratiform ciliated cylindric epithelium. The latter, a specialized type, is designed to keep moist the tracts through which a current of air is constantly passing, to warm the air, and to secrete a mucus which is inhibitory to bacterial growth or bactericidal, and in which the bacteria are enmeshed and are carried by the wavelike motion of the ciliated epithelium to the pharynx and esophagus to be disposed of.

We cannot look for the difference between man and the aquatic animals here. The difference lies in the fact that those animals which are highly modified to live in the water can at their will or involuntarily close the anterior nares and in this way protect their respiratory epithelium from the destructive action of the water.

Wiedersheim[3] says that the diving mammals are provided with a complicated musculature which forms a sphincter in connection with a special valvular apparatus for closing the nostrils.

Zoologists are far from knowing the anatomy and physiology of all animals; nor are they agreed on the relative importance of a great number of modifications of structures which animals present. The information I have gained on the comparative anatomy of aquatic animals, aside from personal observation, has been scattered through many books and periodicals, and I find also that there remains much yet to be ascertained.

Let us here review some of the anatomy of various animals that are modified for life in the water. For interest's sake we will start with the alligator, the highest form of reptilian life. The anatomic feature relevant to this paper is that the muscles of the anterior nares are so arranged as entirely to close the nostrils at the will of the animal, and this is always done when the head is submerged.

Also, according to Reese,[4] the posterior margin of the tongue of the alligator is elevated as a transverse fold that meets a corresponding fold, the velum palatinum from the lower side of the palate, and completely shuts off the mouth from the opening of the trachea and gullet. Also into this hinder chamber open the posterior nares, so that the animal can open its mouth under the water without water coming in contact with the respiratory mucous membrane. To test the efficiency of this means of protecting the nasal mucous membrane from water, I recently sectioned the head of an alligator immediately after submerging in an aqueous solution of methylene blue, and no evidence of staining of the respiratory mucous membrane could be detected.

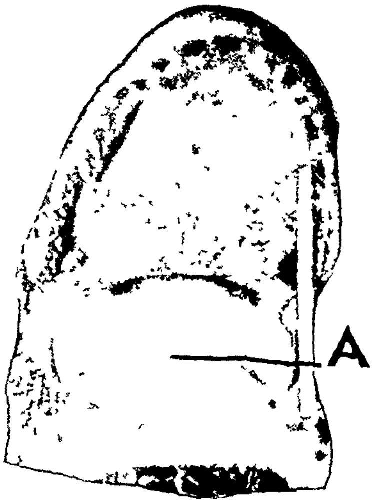

Fig. 3.—Interior of mouth of Alligator mississippiensis: *A*, transverse fold at base of tongue in contact with velum palatinum as while submerged.

In the aquatic birds we find a wide variation in the means they have of protecting the respiratory mucous membrane, yet all are more or less on the same principle. For the following information on the aquatic birds I am indebted to Dr. Alex Whetmore of the United States National Museum, Washington.

The booby, a bird that dives from some distance above the water to catch its prey, has no external nostrils. Its tongue is small, elongated, and set up on a sort of narrow stalk. It can be plugged directly and tightly into the internal nares. The true opening of the trachea has a padded margin of muscle and connective tissue called the rima glottidis, which can be tightly closed. A crest or projection on the thyroid cartilages, itself cartilaginous, called the ligula laryngis, serves as a support for this valvular arrangement. The cormorant and the snake bird are similar. They have no external nostrils. The diving petrel has external nostrils, but they may be closed very tightly by an arrangement similar to that in the alligator. The penguin has very minute, hairlike slits for external nostrils, and arrangements in the glottis and internal nostrils similar to those of other birds. The frigate bird is rather transitional. It has a scale-like membrane entirely closing the external nostrils, but indicating that they were formerly open. Though the external nares of some of the aquatic birds cannot be closed, water, in no instance, in the species that I have reviewed, is allowed to come in contact with the parts lined by the respiratory epithelium.

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[2] Fenton, R. A.: Ann. Otol., Rhinol. & Laryngol. **32**: 526 (June) 1923.

[3] Wiedersheim, R.: Comparative Anatomy of Vertebrates, p. 264.

[4] Reese, A. M.: The Alligator and Its Allies, 1915, p. 151.

In many of the mammalian groups there have arisen forms modified for life in the water in that they too have a musculature by which their nostrils are closed at the will of the animal and which protects their stratiform ciliated epithelium from water. This is true in the beaver, the hippopotamus, the seal, the walrus, the manatee and the dugong. This arrangement of the anterior nares we also find to exist in the cetaceans, which are modified to a higher degree to life in the water than are any other of the aquatic mammals.

From biology we learn that every species of animal life is adapted to its environment and that all its organs are fitted to its functions and all its functions to its environment. Now, let us briefly discuss man's adaptation for water. What has he, or has he anything that is homologous to the musculature aquatic mammals have for closing the nostrils and for keeping water from their nasal cavities and appurtenances? Eckley,[5] in describing the compressor narium of man, states it is "a small muscle rising from the superior maxilla and is inserted by an aponeurosis across the bridge of the nose into its fellow of the opposite side. . . . This is a small muscle at best and very hard to demonstrate." In describing its functions and that of the dilator naris anterior and dilator naris posterior, which oppose the compressor narium, he says, "By their action, they confer on the human face facial expression." These comparative anatomic features of the aquatic animals and man are in line with the assertions of the students of comparative anatomy and biology that man is now far, far removed from being an aquatic animal and has not the adaptation for an aquatic environment. Time will not permit a discussion of the phases of inheritance of acquired characteristics or of the degenerating effect of disuse on an organ.

It is well to recall here that when man assumed the upright position he also lost the gravity drainage of his maxillary and sphenoidal sinuses; which means that the drainage of these sinuses is solely dependent on the wavelike cilia of the ciliated epithelium. Hence the drainage of the sinuses of man is not as complete as it is in the aquatic animals, in whom the ostia are so situated that gravity drainage is a material factor.

It is not my purpose to describe the anatomy and physiology of the ear of the aquatic animals, but it is germane to our subject to refer briefly to some of their modifications to show how thoroughly Nature has endowed them with organs necessary for aquatic life, and also to note the conspicuous absence of these modifications in man. For instance, in the alligator, immediately behind the eye is a hinged cornified flap constituting an ear covering which is closed tightly as the reptile goes beneath the water, and this prevents water from coming in contact with the membrana tympani. An analogous modification, which has the same function, can be seen in other aquatic animals, for instance the beaver and the hippopotamus.

So far I have endeavored to show some of the adaptations of aquatic animals to the circumstances in which they live, particularly with reference to keeping water from gaining entrance to the nasal cavities, whereby infections might be introduced or else injury done to the respiratory epithelium that lines the true nasal cavity and the paranasal sinuses. It is evident that these adaptations are sufficient for their mode of living and are far superior to any means which man has for keeping water from the respiratory tract.

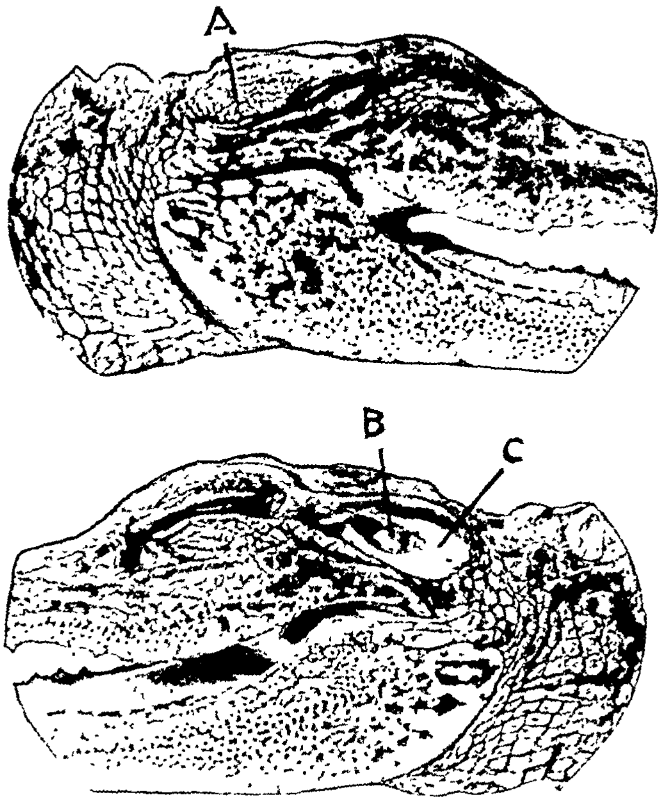

Fig 4 —Lateral view of head of Alligator mississippiensis· *A*, cornified flap covering and protecting membrana tympani; *B*, membrana tympani exposed; *C*, area where cornified flap has been detached.

LOWERED RESISTANCE FROM CHILLING

This brings us to the second of the possible causative factors of sinusitis from swimming; that is, a lowered resistance, rendering the individual more susceptible to the pathogenic organisms normally harbored in the upper air passages.

The question of the duration of time one can remain in the water without reducing the body temperature and lowering one's resistance is a matter of paramount importance. We know that cold water has a veritable appetite for heat, and all authorities agree that prolonged cold baths cause a rapid loss of body heat.

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[5] Eckley, W. T.: Practical Anatomy, 1899, pp. 34-35.

The temperature was constantly subnormal, 95 F. being common, and it was reported as low at 92 F., twelve hours before her death. Respirations were somewhat irregular for days before her dissolution, and were as low as from four to six a minute many hours before her death. This was at least three days removed from the one-fourth grain hypodermic of morphin given for her pain. Not to exceed five such hypodermic injections were given during my entire period of observation. The pulse was surprisingly regular during most of the illness, becoming weak very gradually. The blood pressure did not exceed 140 at any reading. Death seemed to be due to respiratory paralysis.

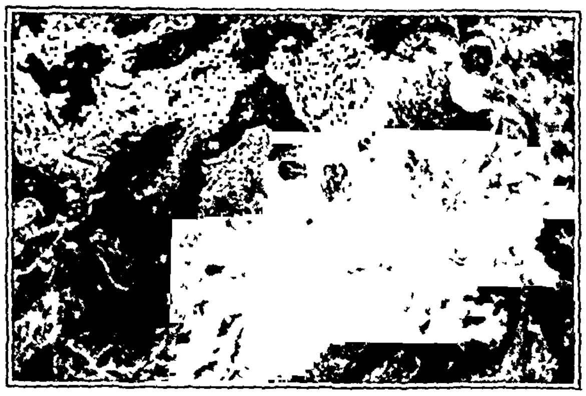

Fig. 2.—Chronic diffuse nephritis.

articularly striking were the signs of intoxication. She did not go into coma as usually thought of with uremia. The mentality was benumbed, and drowsiness, giddiness, somnolence and slight delirium at times were present. There was anorexia, and very moderate headache. She recognized me at each of my visits, would frequently give evidence of having heard conversations in the adjoining room, and conversed with the attendants to the last. Ten minutes before her death she asked her sister to lay the heavy covers back, and thanked her for doing so.

Motor symptoms were likewise peculiar to the type of prolonged obstructive anuria. These were limited to muscular twitchings, fibrillations and subsultus, and these never approached convulsive movements, either locally or generally. There were increased knee kicks but no Babinski phenomenon. There was no paralysis, ocular, facial or systemic. When first seen, the pupils were slightly dilated; later there was definite myopia.

Only symptomatic and palliative treatment was instituted. Fecal evacuation was encouraged by daily enemas or mild laxatives. Milk, coffee and water were crowded. There was difficulty in forcing perspiration, and after a day or two of attempts, hot packs were dispensed with. There were, however, spontaneous drenching sweats on several occasions. No diaphoretics were used at any time. Vomiting, which had existed for eight weeks before the onset of the anuria, still persisted from one to three times a day, which had a tendency to be copious and malodorous. Salivation was not noticeable. Unfortunately, no urea studies were made on the vomitus or saliva.

Deserving of record is the white blood count, which averages above 21,000, the polymorphonuclears being in excess of 90 per cent. The blood urea nitrogen, determined by Marshall's modification of Van Slyke and Cullen's method, was:

September 6 (fifteenth day of illness): 130 mg. per cent.
September 8 (seventeenth day of illness): 131 mg. per cent.
September 13 (twenty-second day of illness): 170 mg. per cent.
September 18 (twenty-seventh day of illness): 169 mg. per cent.

The blood serum calcium fell from 7.9 mg. per cent., September 6, to 6.4 mg. per cent., September 13.

Necropsy.—Three hours after death, the pelvic anatomy was found distorted (Fig. 1). In the right false pelvis reaching down into the culdesac was a hard, oblong, somewhat friable mass as large as the double fist. This was firmly bound down against the vessels and nerves and completely encircled the right ureter, which was dilated to 1 to 2 cm., down to the mass, where the dilatation ended abruptly. The remainder was completely collapsed for about 7 cm. The right kidney was moderately hydronephrotic, the renal pelvis and calices being dilated to approximately 100 to 150 c.c. The left pelvis contained a mass identical in firmness and consistency to the opposite, of one-third its size, which likewise encircled and compressed the ureter for fully 5 cm. A left hydronephrosis two-thirds the size of the right and left hydro-ureter was discovered. Dissection was done with difficulty. The kidneys, masses, bladder, rectum and vagina were carefully removed, but no evidence of fistula found. There was no urine in the bladder. There was no evidence of metastasis in the liver or lungs. The right pleura was adherent throughout. The left pleural cavity contained about 500 c.c. of fluid. Nothing of interest further was found.

Dr. H. R. Wahl, dean of the University of Kansas School of Medicine and head of the Department of Pathology, has in the museum the specimen with detailed description of gross and microscopic pathologic changes. I give here the essential points of his description, leaving to another communication the points of interest in the pathology of obstructive anuria.

To the foregoing description, he adds: Grossly, the kidneys' capsule stripped rather readily, though here and there it seemed to be slightly adherent. The surface was rather smooth. On section the kidney cut readily and the cut surface did not present anything very unusual. The right kidney showed the pelvis and calices were much more markedly distended than the left, and there was more atrophy of the kidney substance.

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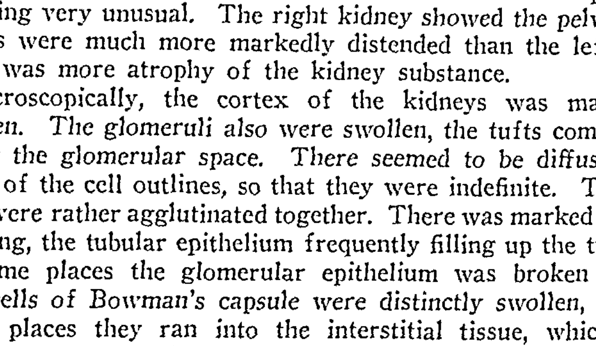

Fig. 3.—Recurrent carcinoma.

A section taken through the tumor tissue in various areas showed large, irregular, atypical masses of squamous or flattened epithelial cells evidently derived from the cervix and infiltrating in every direction. These cells showed numerous mitotic figures and marked variation in their general appearance in the size, shape and staining.

Anatomic Diagnosis.—This was: secondary carcinoma involving the pelvic lymph glands and the tissue surrounding the bladder; absence of uterus (operative), with cicatricial scar tissue in the neighborhood of the bladder and adjoining the peritoneum and adjacent structures; complete stenosis of both ureters; bilateral hydronephrosis and hydro-ureter; acute and chronic diffuse nephritis. (The lesions in the kidneys, however, were not as severe as one would expect with a complete anuria of the duration that this patient had.)

COMMENT

A fairly careful review of the literature available in America would lead us to believe that the case described is very rare. There is ample evidence in the literature that such cases were much more common before roentgen-ray diagnosis, skilled ureteral catheterization, and asepsis and boldness of modern surgery pointed out and relieved the pathologic condition. In this case, every evidence pointed to a bilateral recurrent carcinoma, and the patient and her relatives would not allow, nor did I feel justified in urging, radical intervention.

I have presented the case briefly but accurately as it was studied clinically. The fact that so many in attendance would have welcomed the appearance of urine, and the fact that catheterization gave no evidence of urine in the bladder on any trial, does not prove beyond a question that there was none passed. The extreme difficulty in dissecting the ureters from the masses on either side is the most convincing evidence of the unusual history agreeing with the gross pathologic findings. There is so little known about the function of the kidneys in complete bilateral obstruction, and so little of microscopic evidence is attached to the recorded long-standing anuria cases, that the condition demands a separate paper for consideration of such conditions.

As one studies the literature, the impression is imperative that the clinical picture, the metabolism and the type of uremia itself found in these conditions is so very different from the usual case seen that one longs to unravel the mystery connected with such a case. If there be divergence between the gross or microscopic renal pathologic condition here and that expected from cases of unilateral obstruction, we can only await the further research of others to explain. It may be said, finally, that the functional changes in oxidation processes, of vicarious nitrogen elimination, and remarkable tolerance to complete uremia, are quite beyond present knowledge to interpret. One would be extremely fortunate to see more than one such case in a lifetime, and, when seen, the condition impels familiarity with the world literature as it did Fowler, Farlow and Sinkler.[18]

815 Shukert Building.

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[18] Sinkler, W.: Suppression of Urine of Long Standing Without Symptoms of Uremia, Tr. Col. Phys. Philadelphia **18**: 121-131, 1896.

Bilateral Pulmonary Tuberculosis.—All pulmonary tuberculosis is essentially bilateral, so far at least as the deep lung is concerned. The roentgen ray shows involvement of both deep paravertebral regions, but more marked, as a rule, on one side than on the other. On the side less involved the process may remain restricted to the deep lung, or in time it may in its turn reach the apex and develop superficial lesions of the upper lobe, which do not differ in their pathology from those of the lung first attacked. As a rule, lesions of the lung secondarily involved are larger and more acute than those of the side first affected. It is a very common error to overlook the initial superficial lesion and to consider the second as the first involvement, or, if the presence of a small lesion is discovered on the side really first implicated, to consider it secondary in point of time to the larger lesion. Unless both lesions are very old, the distinction is made as follows: The older lesion will show obliteration or greater contraction of Kronig's isthmus, a harsher breathing and a more prolonged expiration.—Pratt, J. H., and Bushnell, G. E.: Physical Diagnosis of Diseases of the Chest, p. 210.

ISTHMOSPASM OF THE FALLOPIAN TUBE

REPORT OF CASES *

WILLIAM T. KENNEDY, M.B. (Tor.)
Junior Attending Surgeon, Woman's Hospital
NEW YORK

Sterility, dysmenorrhea and anteflexion in cases in which no pathologic condition can be found must have as their cause some variation from the normal.

After the examination of the male has revealed numerous normal motile spermatozoa, and after the examination of the female has shown no pathologic condition of the genital tract from the vulva to the ovary, sterility is still a puzzle to the gynecologist. Factors such as incompatibility of man and wife, stenosis of the cervix, and anteflexion of the uterus are laid down as causes, but they may be only steps in a chain in the individuals having a general hypertonic condition of all muscle fibers, especially the circular smooth muscles, sometimes the autonomic nerve fibers predominating and at other times the sympathetic.

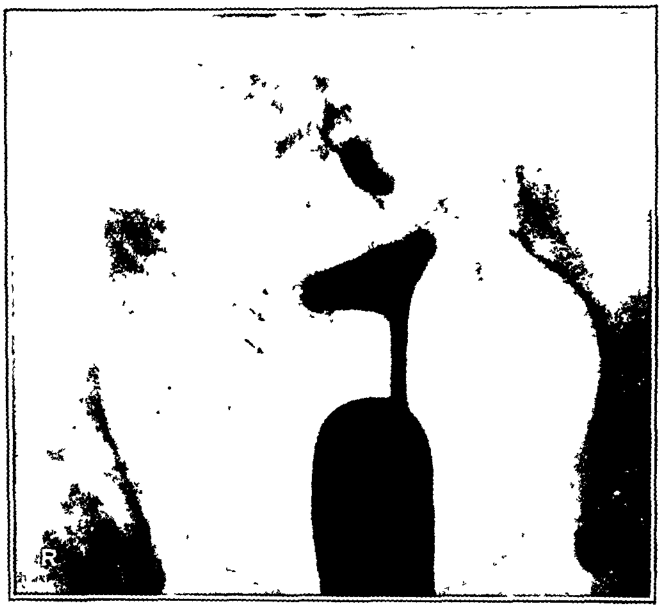

Fig. 1.—Isthmus of right tube normal.

Haas [1] describes the hypertonic infant and the successful treatment of hypertonic stenosis and pylorospasm with atropin. Whether or not this and other hypertonic tendencies extend into adult life, we do not know; but it is quite possible that it is present to a certain degree in the so-called neurasthenic individual.

Williams [2] describes a longitudinal muscle in the normal isthmus which may assist materially in the migration of the fertilized ovum from the fimbria into the uterine cavity, but its inability to contract beneath a hypertonic circular muscle may inhibit or prevent the passage of an ovum.

Schmidt,[3] describing the condition of the interstitial segment of the tube in pregnancy, believes that only the absence or pathologic course of muscle contractures—

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* From the Clinic of the Woman's Hospital

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Haas, S. V.: Arch. Pediat. **36**: 516 (Oct.) 1919.

[2] Williams: Obstetrics, Ed. 4, 1917.

[3] Schmidt: Ztschr. f Geburtsh. u. Gynäk. **86**:459 (Dec. 22) 1923.

The temperature was constantly subnormal, 95 F. being common, and it was reported as low at 92 F., twelve hours before her death. Respirations were somewhat irregular for days before her dissolution, and were as low as from four to six a minute many hours before her death. This was at least three days removed from the one-fourth grain hypodermic of morphin given for her pain. Not to exceed five such hypodermic injections were given during my entire period of observation. The pulse was surprisingly regular during most of the illness, becoming weak very gradually. The blood pressure did not exceed 140 at any reading. Death seemed to be due to respiratory paralysis.

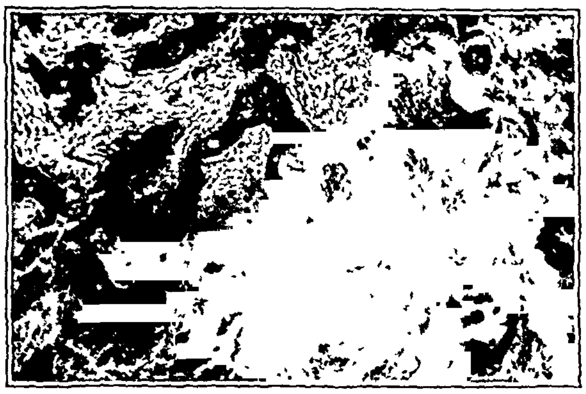

Fig. 2.—Chronic diffuse nephritis.

Particularly striking were the signs of intoxication. She did not go into coma as usually thought of with uremia. The mentality was benumbed, and drowsiness, giddiness, somnolence and slight delirium at times were present. There was anorexia, and very moderate headache. She recognized me at each of my visits, would frequently give evidence of having heard conversations in the adjoining room, and conversed with the attendants to the last. Ten minutes before her death she asked her sister to lay the heavy covers back, and thanked her for doing so.

Motor symptoms were likewise peculiar to the type of prolonged obstructive anuria. These were limited to muscular twitchings, fibrillations and subsultus, and these never approached convulsive movements, either locally or generally. There were increased knee kicks but no Babinski phenomenon. There was no paralysis, ocular, facial or systemic. When first seen, the pupils were slightly dilated; later there was definite myopia.

Only symptomatic and palliative treatment was instituted. Fecal evacuation was encouraged by daily enemas or mild laxatives. Milk, coffee and water were crowded. There was difficulty in forcing perspiration, and after a day or two of attempts, hot packs were dispensed with. There were, however, spontaneous drenching sweats on several occasions. No diaphoretics were used at any time. Vomiting, which had existed for eight weeks before the onset of the anuria, still persisted from one to three times a day, which had a tendency to be copious and malodorous. Salivation was not noticeable. Unfortunately, no urea studies were made on the vomitus or saliva.

Deserving of record is the white blood count, which averages above 21,000, the polymorphonuclears being in excess of 90 per cent. The blood urea nitrogen, determined by Marshall's modification of Van Slyke and Cullen's method, was:

September 6 (fifteenth day of illness): 130 mg. per cent.
September 8 (seventeenth day of illness): 131 mg. per cent.
September 13 (twenty-second day of illness): 170 mg. per cent.
September 18 (twenty-seventh day of illness): 169 mg. per cent.

The blood serum calcium fell from 7.9 mg. per cent., September 6, to 6.4 mg. per cent., September 13.

Necropsy.—Three hours after death, the pelvic anatomy was found distorted (Fig. 1). In the right false pelvis reaching down into the culdesac was a hard, oblong, somewhat friable mass as large as the double fist. This was firmly bound down against the vessels and nerves and completely encircled the right ureter, which was dilated to 1 to 2 cm., down to the mass, where the dilatation ended abruptly. The remainder was completely collapsed for about 7 cm. The right kidney was moderately hydronephrotic, the renal pelvis and calices being dilated to approximately 100 to 150 c.c. The left pelvis contained a mass identical in firmness and consistency to the opposite, of one-third its size, which likewise encircled and compressed the ureter for fully 5 cm. A left hydronephrosis two-thirds the size of the right and left hydro-ureter was discovered. Dissection was done with difficulty. The kidneys, masses, bladder, rectum and vagina were carefully removed, but no evidence of fistula found. There was no urine in the bladder. There was no evidence of metastasis in the liver or lungs. The right pleura was adherent throughout. The left pleural cavity contained about 500 c.c. of fluid. Nothing of interest further was found.

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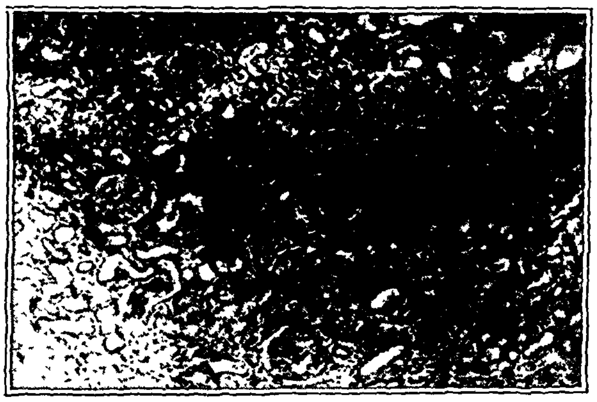

Fig. 3.—Recurrent carcinoma.

A section taken through the tumor tissue in various areas showed large, irregular, atypical masses of squamous or flattened epithelial cells evidently derived from the cervix and infiltrating in every direction. These cells showed numerous mitotic figures and marked variation in their general appearance in the size, shape and staining.

Anatomic Diagnosis.—This was: secondary carcinoma involving the pelvic lymph glands and the tissue surrounding the bladder; absence of uterus (operative), with cicatricial scar tonic in character, and here as in the intestine, atropin in small doses causes excitation and in large doses cessation of the movements of the uterus. Toxicologically, it is important to remember that, simultaneously with peristalsis, uterine contractions may be reflexly excited by chemical irritation of the intestinal mucous membrane. MacLeod[17] says that pituitary extract acts directly on involuntary muscle fibers themselves. From the recent physiologic study of the tubes, uterus and cervix by Whitehouse and Featherstone,[18] we may surmise that there is some local center apparently controlling peristalsis; and, since peristalsis begins near the junction of the tube and the uterus, it might be logical to assume this center to be in or near the isthmus. Any hypertonic condition would probably have its origin here also and be proportional to the degree of stimulation of autonomic innervation over the sympathetic innervation, and may produce an abnormal contraction of the circular muscle even to obstruction. Let us recall pyloric stenosis. The pylorus is innervated by the autonomic nerve branches, which supply the circular muscles, and by the sympathetic fibers, which probably supply the longitudinal muscles. Stimulation of the autonomic causes violent contraction of the circular smooth muscles, but stimulation of the sympathetic produces intestinal relaxation. The balance of the two innervations produces no symptoms, but hyperautonomic innervation causes obstruction. Two cases were reported by Hirschsprung in 1888, but it was not until 1896 that Thomson first published its description. Now its occurrence is quite frequent. It is amenable to medical and surgical treatment. Similarly, may the isthmus of the fallopian tube not respond? We recall that epinephrin, stimulating the sympathetic, and atropin, paralyzing the autonomic, produce this effect in bronchioles and intestines and should do so in the tubes, uterus and cervix. By deduction, we might expect to find dysmenorrhea relieved by atropin or by hypodermic epinephrin. Cases 1 and 2 will illustrate this deduction.

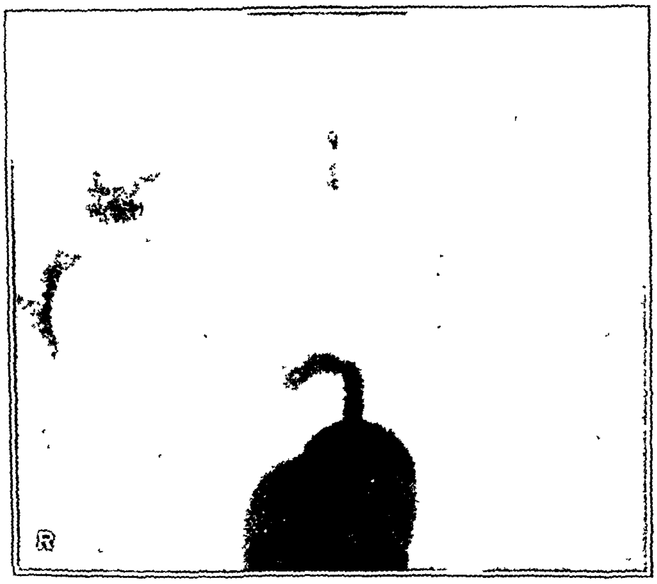
Fig. 3.—Findings illustrating deduction that circular isthmian muscles of tube were hyperactive. Similar to tube in Figure 2.

Case 1.—A woman, aged 27, came on account of sterility. The Wassermann reactions of both husband and wife were negative. Operation for retroversion was done. She became pregnant and had a miscarriage. Six other miscarriages followed. During the eighth pregnancy, more or less uterine contractions began about the third month, accompanied by spells of nausea with rather frequent vomiting even though the patient was confined to bed. She was given atropin, hyoscyamus and benzyl benzoate, with the result that both the uterine contractions and the pyloric contractions were relieved for the next seven weeks, but the patient eventually aborted. Thus, isthmospasm (if we look on uterine contractions as initiating in the isthmus) and pylorospasm were simultaneously present in the same patient, and both were temporarily relieved by antispasmodics.

Case 2.—A woman, aged 27, had dysmenorrhea since menstruation began. The menstruation cycle was 12 by 28 by 7. Pain was severe for four days; there were small clots for the first two days. The breasts swelled during menstruation. She had been married five years, and was pregnant four years before I saw her. Miscarriage occurred at six months following an injury. Three years before, in the Edinburgh Infirmary, both tubes had been resected (report only recently received). At the Woman's Hospital, in July, 1923, dilation and curettage were done, and a stem pessary was applied. Pathologic examination of the uterine curettings revealed premenstrual uterine mucosa. Convalescence was normal. The stem remained in until Sept. 19, 1923. In October there was no relief from symptoms. In January, 1924, the condition was unchanged. The tubes were insufflated under a pressure of 200 mm. of mercury. Five trials were made. The tubes were occluded. In February and March, the uterus and tubes were dilated with carbon dioxid gas, just before menstruation, with slight relief of the dysmenorrhea. In April, the tubes and uterus were again dilated with carbon dioxid gas, and 6 minims (0.36 c.c.) of 1 : 1,000 solution of epinephrin was injected into the anterior lip of the cervix with the result that at this menstruation there was scarcely any pain. For the May menstruation the treatment was the same as in April, with the result that the patient had no pain. The June period came on a day or two early; dilation was not done and epinephrin was not given, yet there was no pain during this menstruation; then epinephrin was discontinued, and dysmenorrhea began to recur gradually and is now as severe as ever.

DIAGNOSIS

Symptoms.—There may be but one symptom, sterility; or there may be two symptoms, sterility and dysmenorrhea.

Signs.—Before Operation: At present only one preoperative sign has been observed by roentgenographing those tubes which are occluded at their fimbriae. (It will be seen that certain tubes occluded at the isthmus can be placed in this class.) A further analysis of cases presented in a previous paper[19] shows that of six cases in which the tubes were occluded at their isthmuses, four uteri were anteflexed and two were normal; also, of six cases in which the isthmus was able to contract and empty the contents of 20 per cent. solution of sodium bromid in either direction, four uteri were anteflexed, one normally flexed, and one retroverted.

Figure 1 illustrates a normal isthmus throughout its entire length. Figure 2 shows that type of tube in which the isthmian canal was emptied by the contraction of its circular muscle but the uterus and the ampulla of the tube remain full. This patient's uterus was moderately anteflexed, and she complained of sterility and dysmenorrhea. More than a year later, a patient came complaining of sterility and dysmenorrhea whose left tube had been previously removed for an ectopic pregnancy. It was deduced from the previous observation that one was dealing with a tube having its circular isthmian muscles hyperactive. Figure 3 was taken, and illustrates our deduction. A later operation done for adhesions revealed an apparently normal tube.

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[17] MacLeod: Physiology and Biochemistry, Ed. 4, 1922, p. 811.
[18] Whitehouse and Featherstone: Brit. M. J. 2: 406 (Sept. 8) 1923.
[19] Kennedy, W. T.: Am. J. Obst. & Gynec. 3: 607 (June) 1922.

During Operation: Peterson reports tubes occluded to carbon dioxid gas insufflation which during operation appear normal and allow the passage of gas through the isthmus; i. e., when relaxed by anesthesia.

After Operation (microscopic): This observation was made by removing the isthmus on each side from one patient and one isthmus from another patient, and hen serially sectioning and staining them. The following paragraphs give a brief summary of the two cases.

Case 3.—A woman, aged 23, married at 18, complained of sterility and dysmenorrhea. Menstruation began at 14 and was irregular; duration was three days, with pain. There was no history of pelvic inflammation. The uterus was small and anteverted, but not anteflexed. The cervix was soft. The left adnexa were thickened, with a small ovarian cyst. The tubes were *insufflated by Aldridge and* reported occluded. Spermatozoa of the husband were *poorly developed and few in number.* At operation, May 13, 1921, the uterus and right ovary were found normal. The left ovary had a cyst about 3 cm. in diameter in its wall. Both ampullae of the tubes were normal in every way except that one fimbria of the left tube was attached to the posterior of the broad ligament by a single fine adhesion. Neither isthmus would pass a fine probe. The left isthmus was normal in appearance but felt as though it contained a "fibrous core." The right isthmus was larger and felt as though it contained a larger "fibrous core." It was decided that the seat of obstruction was the isthmuses, so both were excised and a hysterosalpingo-anastomosis[20] was done after the method I[21] described in 1923. Although the dysmenorrhea has gone and gas has passed through the tube at pressures lower than 100 mm. of mercury at two occasions, one and two years, respectively, since operation, the patient has not yet become pregnant. Both isthmuses were serially sectioned, stained with hematoxylin-eosin, and by Van Gieson's method. The canals of both revealed slight variation in size, were not constricted, were patent, and the narrowed diameter of each was greater than 1 mm. Both walls had normal musculature, and showed no nodules and no evidence of any inflammatory condition. The muscle wall of the right tube was considerably thicker than that of the left, and its epithelium was slightly irregular in shape and slightly atrophic in appearance. In short, the tubes were very practically normal. We may conclude in this case that the normal isthmus did obstruct the flow of carbon dioxid gas during insufflation at 200 mm. of mercury pressure and that after these isthmuses were removed, carbon dioxid gas easily passed through the tubes.

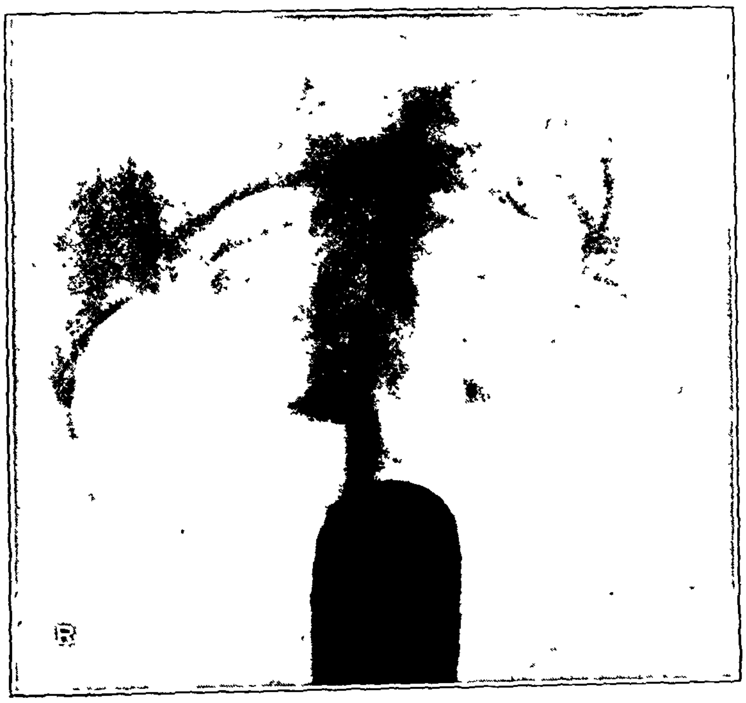

Fig 4.—Right tube: shadow absent; isthmus in spasm preventing sodium bromid solution from passing into ampulla.

Case 4.—A woman, aged 27, married five years, complained of sterility and dysmenorrhea. The tubes were occluded. The husband had two children with the first wife. The patient, the second wife, was told she had had salpingitis eight years before. The uterus was small, anteflexed and retrocessed. The adnexa were normal. A roentgenogram taken with 20 per cent. solution of sodium bromid, and *200* mm. of mercury pressure, showed the right isthmus occluded, *the left fimbria occluded,* and the uterus acutely anteflexed. Figure 4 illustrates the condition of the right tube. At operation the ampulla of the right tube was found normal, and the isthmus, which throughout its length was extremely small and had a corelike canal approximately 1.5 mm. in diameter, was excised, serially sectioned and *stained, but no obstruction was found.* Hence, another tube with a microscopically *normal isthmus obstructed the* passage of carbon dioxid gas and the passage of the solution of sodium bromid at 200 mm. of mercury pressure before operation. Thus, a tubal isthmus appearing microscopically normal can have a patent canal and yet be obstructed. Doubtless more such tubes *exist, and the isthmus, while anatomically* normal, has a physiologic abnormality of *hypertonic circular muscles.*

TREATMENT

Such a tube presents itself to us for some treatment other than that in present use. The stem pessary, temporarily relieving spasm and restoring uterine peristalsis, dilation of the cervix, paralyzing for a time the cervical musculature, and the negative electrode also relieving the spasm are among the present methods used in relieving dysmenorrhea. But often these are only temporary, and our results for ameliorating anteflexion and dysmenorrhea and for relieving sterility will be lasting only when we can consistently relieve isthmic and uterine spasm and restore the normal peristalsis of this organ. Antispasmodics may help us. Miller has successfully treated pylorospasm and, incidentally, isthmospasm in early pregnancy by antispasmodics. Thalhimer has successfully relieved pylorospasm and incidentally isthmospasm in early pregnancy, relieving with insulin and glucose the acidosis producing them. But deranged metabolism may be the seat of the cause and show itself either in an overstimulated autonomic or an exhausted sympathetic nervous system.

CONCLUSIONS

1. Isthmospasm of the fallopian tube is one obstruction between the meeting of ovum and spermatozoa and may be the only *obstruction preventing the passage of a fertilized ovum from the tube into the uterus*—a predisposing factor in ectopic gestation.

2. Isthmospasm is one condition that will explain selective sterility.

3. Attenuation of an isthmospasm would explain some delayed conceptions.

4. Isthmospasm exists in some women complaining of sterility or sterility and dysmenorrhea, and is frequently associated with anteflexion.

5. Isthmospasm is caused by improper balance of the autonomic and sympathetic innervations, the autonomic being in excess or the sympathetic being deficient.

6. A tube, having an apparently normal ampulla and no evident abnormality of the isthmus, even though it obstructs the passage of carbon dioxid gas by insufflation, should not be removed at operation because we may render a patient permanently sterile who is now only temporarily so.

163 East Sixty-First Street.

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[20] First done by Watkins, T. J.: J. Exper Med., 1897. Reis: Am. J. Surg. & Gynec. **11:** 180 (March) 1899. Shaw, H. N.: Bull. Johns Hopkins Hosp. **32:** 305 (Sept.) 1921.

[21] Kennedy, W. T.: Am. J. Obst. & Gynec. **6:** 12 (July) 1923.

ABSTRACT OF DISCUSSION

Dr John Osborn Polak, Brooklyn: Gynecologists too frequently overlook the fact that an anteflexed uterus is merely a part of a symptom complex The woman has not only an anteflexed uterus but also a defectively formed cervix, a narrow vagina, and long, convoluted tubes; in other words, the congenital defects are shown in all her genital organs These are the cases in which it was formerly the practice to use a stem pessary, and its introduction, if any cervical infection existed, deprived the woman of any future chance of pregnancy The second point referred to was the so-called spasm in the interstitial portion of the tube, produced by insufflation by the Rubin method Whether this obstruction is the result of spasm or because of the pressure exerted on the mucous folds in the tube, causing them to act like a disk clutch in an automobile as they are pushed together, closing the lumen, I do not know; but we have demonstrated repeatedly that a tube that was not patent to gas when the Rubin test was made was found open and patent when the gas was passed through the tube with the patient under an anesthetic. This observation would seem to bear out the suggestion of spasm

Dr Ludwig A Emge, San Francisco. We are indebted to Dr. Rubin for the excellent method of testing the patency of the fallopian tube, but we also struck an obstacle which we could not explain and that was that after we had established a definite occlusion of the tube by the Rubin method we could not confirm it at abdominal operation Going back to the physiology of the uterine muscle, we proved to our own satisfaction that a sudden impulse given to the uterus will produce spasm in most animal uteri Therefore, we concluded that the method as originally described by Dr Rubin should be so modified that no sudden impulse should be given by the gas and that the gas should not at any time be at a temperature lower than that of the body Very remarkable was the discovery that a uterus that would have contracted with the ordinary Rubin method would not offer any obstacle to the heated gas given at a lower pressure but would open up and allow the gas to flow into the abdomen We satisfied ourselves of this in abdominal operations We learned further from this method that it might be possible to overcome the primary spastic contraction of the uterus at the horn by giving the patient benzyl benzoate or papaverin Then we resorted to the use of galvanic electricity in very small doses, 10, 15 or 20 ma, for ten minute periods on succeeding days, and we found that in three or four days we would open up the uterine tubes and allow the gas to pass through

Dr Donald Macomber, Boston · I wish to emphasize the necessity for proceeding gently with the Rubin test. The application of sudden pressure to the uterus is very apt to bring on greatly increased spasm Another point referred to —the temperature of the gas—is also important We have adopted a procedure by which the gas is expanded first and brought to body temperature before it is allowed to enter the uterus Our results have been much more satisfactory with that method In doubtful cases in which there is some evidence of spasm or failure, we try benzyl benzoate and then test the tubes If that fails, we then do the test as Dr Polak suggested, under an anesthetic In that way only will a negative test prove to be negative at operation in every case

Dr William T Kennedy, New York The points that Dr Polak emphasized and brought out are very valuable in this work It seems to me that we are dealing with a symptom complex Dr Emge referred to the applications of heat and galvanism in doing the Rubin test in order that he might get the correct conception of the condition of the tubes Dr Macomber uses gentle pressure and also heat applications to the musculature of the uterus in order that insufflation might not cause an unnecessary contraction of the muscle Dr Macomber also brought out the most important point, that we should not consider the tube absolutely occluded unless under anesthesia the gas will not pass through the tube

PERNICIOUS ANEMIA, FOLLOWING ILEOSTOMY *

CLAUDE F. DIXON, M.D.
JOHN G BURNS, M D
Fellows in Surgery, the Mayo Foundation
AND
HERBERT Z GIFFIN, M D.
ROCHESTER, MINN.

The acute toxemia resulting from disturbance of the normal motor mechanism of the upper intestinal tract has been investigated in recent years, and it is now known that with high intestinal intoxication there may be no actual mechanical obstruction or vomiting. This work points indirectly to the possibility of equally serious results from more chronic types of physiologic disturbance in the intestinal tract. It has been shown that toxic substances may be derived from protein. Iwao[1] produced very marked anemia resembling the pernicious type by injecting tyramin into animals. This substance has been isolated from decomposing meat, and has been produced by the action of colon bacilli on tyrosin. Colon bacilli are normally found in the ileum; Hurst[2] and Wichels[3] also found them in the stomach and very abundantly in the small intestines in cases of pernicious anemia. Under normal conditions, the colon bacillus in the small intestine probably has no opportunity to produce toxic material from protein, but under abnormal conditions, when intestinal motility, physiologic function and bactericidal defense are interfered with, toxic substances may be formed.

Normally the fluid of the fecal material is absorbed chiefly in the proximal half of the large intestine. From the clinical standpoint, W J. Mayo,[4] in 1909, called attention to the profound anemia that may be present in cases of carcinoma of the proximal portion of the large intestine, even though the malignancy is not advanced and obstruction is only slight. Malignancy of the distal portion of the colon is not usually associated with marked anemia. Dr. Mayo concluded that the cause of certain cases of intestinal toxemia might be assumed to be in the terminal ileum and cecocolon. The absorption of hemolytic, myelotoxic or neurotoxic material from the contents of the small or large intestine has been regarded as more than a plausible possibility in pernicious anemia because of the prominence of gastrointestinal symptoms, the atrophy of the gastric and intestinal mucous membrane, and the occasional association of pernicious anemia with intestinal stricture and also parasitic disease. The abnormality of the bile with its increased and abnormal pigments has directed attention to the spleen, the gallbladder and the liver as accessory, or even primary, factors in the initiation of the disease The presence of hemosiderosis in the liver in pernicious anemia has been thought to indicate that the destruction of blood is most active in the portal system and its organs. These considerations led us, in the fall of 1923, to the decision that, under favorable circumstances, we would recommend temporary elimination of the colon by means of an ileostomy in cases of pernicious anemia, with a view to the determination of the influence

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* Read before the Association of American Physicians, Washington, D C, May 4, 1925

[1] Iwao, Toku Beitrage zur Kenntnis der intestinalen Autointoxikation, Biochem Ztschr 58: 436 443, 1914

[2] Hurst, A F Addison's (Pernicious) Anemia and Subacute Combined Degeneration of the Spinal Cord, Brit M J 1: 93 100 (Jan 19) 1924

[3] Wichels, Paul Ueber das Vorkommen von Bacterium coli im Inhalt des nüchternen Magens bei perniziöser Anamie, Ztschr f klin Med 100: 535 542, 1924

[4] Mayo, W J Tumors of the Cecum, J A M A 53 · 1848 (Nov 27) 1909

of colonic absorption on the course of the disease. Ileostomy may be performed with minimal risk, and, should prolonged improvement occur, ileosigmoidostomy could be performed later, not removing the colon, but excluding it as a mucous tube.

MAYO CLINIC CASES

Case 1.—A man, aged 46, who came under observation, Jan. 10, 1924, had definite characteristics of pernicious anemia, including the objective findings of subacute combined sclerosis and evidence of cerebral changes. The erythrocytes numbered 2,830,000; the color index and the volume index of the erythrocytes were high. There were both clinical and roentgenographic signs of intestinal stasis in the region of the ileocecal coil.

Ileostomy was performed, January 30. The usual medical treatment for pernicious anemia was not carried out following operation. The patient's appetite improved, the icteroid disappeared, and the blood count gradually rose. Five weeks after operation, the erythrocytes numbered 4,060,000. The blood cholesterol was 44 mg. for each 100 c.c. preceding operation, and 140 mg. ten days after operation. Urobilinogen was present in the urine before operation, and absent afterward. Four weeks after operation, the patient developed left hemiplegia and died, March 12. Necropsy revealed the findings of pernicious anemia and hemorrhage into the right cerebrum.

During the spring of 1924, through Professor Decastello of Vienna, we learned of ileostomies performed by Seyderhelm for pernicious anemia. Seyderhelm[5] has since reported ten cases of ileostomy for pernicious anemia, and mentioned four reported by Seeland.[6] In two of Seyderhelm's cases, improvement occurred, but following subsequent closure of the ileostomy, deterioration and death followed. In the cases showing improvement, the character of the ileostomy stool was changed in odor and appearance, and in abundance of intestinal flora; in the cases in which there was no improvement, the stool still maintained the bacteriologic character of colonic fecal material. Seyderhelm assumed that the mucous membrane of the small intestine in cases in which there was no improvement had a bactericidal power, and said that the ileostomy should not be regarded as a therapeutic measure, but as a means of learning whether pernicious anemia is intestinal in origin.

Seyderhelm, Lehmann and Wichels,[7] in 1924, reported on observations following the artificial production of a stricture from 10 to 20 cm. above the ileocecal valve in ten dogs. Two of the animals developed hyperchromic anemia with high color index, megalocytes, anisocytosis, and urobilinogen in the urine. Necropsy revealed an abundant colonic type of flora above the stricture, hemosiderosis of the liver and spleen, and megaloblastic reaction on the part of the bone marrow. In the dogs that did not develop anemia, the abundant colonic type of flora was absent above the stricture, and the degree of distention above was variable and seemed to be irrelevant. Faber,[8] Meulengracht[9] and others[10] have reported cases in human beings of anemia of the pernicious type with stricture of the small intestine, and in these very rich flora of the colonic type were also present. From these observations, it would be inferred that in certain individuals the small intestine is capable of a physiologic defense, which, even in the presence of stricture, may overcome bacterial invasion above the stricture.

Case 2.—A man, aged 50, who came under observation, June 9, 1923, had had gastro-intestinal symptoms for four years, and anemia for at least six months. He had all the characteristics of pernicious anemia, including objective evidence of combined sclerosis of a mild type. The erythrocytes numbered 1,180,000. A series of eight transfusions was necessary to bring about a remission. By August 31, he was in a satisfactory condition. He returned, March 1, 1924, with a count of 1,410,000 erythrocytes, which later fell to 950,000. After six transfusions, the number of erythrocytes rose to 2,610,000. The patient returned again, May 22, at which time the erythrocytes numbered 800,000, and the leukocytes, 1,300; the hemoglobin was 12 per cent. One transfusion was given.

Ileostomy was performed under local anesthesia, May 29. Transfusions were given on the fourth and fifth days after operation when the patient's condition was precarious, but none was given afterward, and hematinics were not administered. The patient's appetite, his color and the blood count improved slowly, but steadily. By July 10, the erythrocytes numbered 2,510,000, and the leukocytes rose to 7,200; the hemoglobin (acid hematin) was 51 per cent. The patient continued to gain without medication. Four months after operation, the erythrocytes numbered 3,050,000; eight months after operation, 3,910,000, and the leukocytes, 8,000; the hemoglobin (Dare) was 73 per cent., and (acid hematin) 87 per cent. The patient had a steady gait; his paresthesias had entirely disappeared, and objectively he was slightly improved, as shown on neurologic examination. He had gained 35 pounds (16 kg.) and the glossitis had not recurred. The patient's general condition was reported as excellent eleven months after operation.

The cholesterol estimations in this case were variable, chiefly below normal, both before and after operation. Urobilinogen, which was present in the urine before operation, was absent on several tests following operation.

Case 3.—A single woman, aged 37, who came under observation, Feb. 21, 1924, had been somewhat anemic since 1916, and definitely affected since 1919. Her last illness had begun about a month before examination.

She showed all the symptoms of pernicious anemia, including paresthesias, but on neurologic examination, no evidence of cord changes was found. The erythrocytes numbered 1,370,000. A series of five transfusions was necessary to bring about a remission. On dismissal, March 20, the erythrocytes numbered 3,060,000. When the patient returned, May 21, they numbered 1,790,000. Two transfusions were given and the erythrocyte count rose to 2,650,000. September 20, they numbered 940,000. Three transfusions brought the number up to 2,870,000.

Ileostomy was performed, October 6. For five days after operation, there was a fever reaching 102 F., without apparent cause, after which convalescence was satisfactory. The patient lost the icteroid tint, regained a normal appetite, relished meat, which she could scarcely eat before, and lost the paresthesias and her sense of fatigue, which had been prominent. The erythrocytes, which had dropped to 1,820,000 following operation, rose to 2,500,000 without medication. The patient was dismissed from observation, November 5, and returned, Jan. 5, 1925, when the erythrocytes numbered 2,870,000. She felt strong and was then able to take long walks. The paresthesias had not reappeared, and the glossitis had not recurred; a neurologic examination was negative; the spleen was still palpable. The patient went to California, January 15, where she died, March 3; the exact cause of death was not determined.

In this case an estimation of urobilinogen, made on the material from the ileostomy the second day after operation, was 1,800 units; estimations on successive days showed a reduction to 1,200 units, with a corresponding reduction in urobilin. One week after operation, the ileostomy tube became obstructed, and the patient was very ill, with signs of upper intestinal intoxication. A specimen from the ileum then showed an increase in urobilin, and 2,200 units of urobilinogen; by the tenth day, urobilinogen was zero, and was absent after that time. It also disappeared from the urine. Cholesterol (Bloor 1) was 83 and 74 mg. before operation, and 45 and 50 mg. after operation.

Case 4.—A single woman, aged 43, who came under observation, Aug. 25, 1924, reported that, four months previously, her general health had begun to deteriorate, and for six weeks she had had paresthesias. The erythrocytes numbered 1,760,000. Characteristics of pernicious anemia were present, including neurologic evidence of moderately advanced combined sclerosis. The patient was unable to walk without assistance. A series of three transfusions was given, and by October 13, the erythrocytes numbered 4,180,000.

Ileostomy was performed, October 14. A high fever followed operation for three days, after which convalescence was satisfactory. The patient lost the icteroid tint, and the paresthesias became less troublesome. She was dismissed, November 11, with erythrocytes numbering 4,260,000. Jan. 6, 1925, she returned, tired out from holiday exertions. The erythrocytes numbered 3,210,000, and dropped to 1,400,000 during the next six weeks. After two transfusions, they rose to 2,500,000, and the patient was dismissed. She reported that she was in fairly good condition, April 10. Glossitis had not recurred.

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[5] Seyderhelm, R.: Die Bedeutung des Dünndarms für die Genese der perniziösen Anämie, Klin. Wchnschr. **3**: 568-572 (April 1) 1924.

[6] Seeland, C. M., quoted by Seyderhelm (Footnote 5).

[7] Seyderhelm, R.; Lehmann, W., and Wichels, P.: Experimentelle intestinale perniziöse Anämie beim Hund; Klin. Wchnschr. **3**: 1439-1442 (Aug. 5) 1924.

[8] Faber, Knud: Anämische Zustande bei der chronischen Achylia gastrica, Berl. klin. Wchnschr. **1**: 958-962, 1913.

[9] Meulengracht, E.: Dünndarmstrikturen und perniziöse Anämie, Darmresection, Acta. med. Scandin. **56**: 432-442, 1922.

[10] Mayo, W. J.: Resection of the First Portion of the Large Intestine, and the Resulting Effect on Its Function, J. A. M. A. **63**: 446-449 (Aug. 8) 1914.

An estimation of urobilinogen on the ileostomy stool the second day after operation was 1,600 units. A week later, the urobilinogen estimation was zero, and urobilinogen was absent from the urine. Estimations of blood cholesterol were 104 and 90 mg. before operation, and 190 mg. three months after operation.

Case 5.—A man, aged 55, who came under observation, Nov. 29, 1924, had had a sore tongue for one year, and had been anemic for four months. Examination revealed the characteristics of pernicious anemia, the erythrocytes numbering 1,060,000. Paresthesias were somewhat troublesome; neurologic examination, however, showed no evidence of cord changes. After four transfusions, the number of erythrocytes rose to 2,560,000. A roentgenogram seemed to indicate a lesion on the lesser curvature of the stomach.

December 26, the stomach was found to be normal on abdominal exploration, and ileostomy was performed. On the fifth day, there was marked suppression of urine, and the blood urea was 212 mg. for each 100 c.c. Improvement followed intravenous administration of large amounts of slightly hypertonic sodium chlorid solution, and fluids by mouth and through the distal loop. Preceding and during this time, large amounts of fluid were lost through the ileostomy; apparently the ileum had not taken on the function of absorption. The urea was consequently not eliminated, but the patient showed no clinical evidence of uremia.

After this time, convalescence was rapid. The patient's appetite and color improved, and he gained 30 pounds (13.6 kg.) in three weeks. Urobilinogen was absent from the urine after operation. He has maintained his condition and blood count for four months without medication. Glossitis recurred for a few days three months after operation, but disappeared following a satisfactory flushing of the colon.

Case 6.—A man, aged 38, who came under observation, Dec. 12, 1924, gave a very definite family history of epistaxis, and his father had died from anemia associated with enlargement of the spleen, which had been diagnosed as pernicious anemia. The patient did not have a history of hemophilia, but he had been subject to nosebleeds since childhood. The onset of his illness had occurred about nine months before examination with increasing weakness, anemia, more frequent epistaxis, and slight bleeding of the gums on brushing the teeth.

The spleen was easily palpable. The erythrocytes numbered 2,370,000. There was a high color index and high volume index of the erythrocytes. The patient had an achlorhydria, and a slightly sore tongue. There were slight paresthesias, and a neurologic examination was negative. Hemolytic icterus was ruled out, but the existence of a mild form of hemorrhagic purpura was questionable. The platelets were approximately 100,000, the bleeding time and retractility of the clot were normal; the coagulation time by the Lee method was normal. A diagnosis of pernicious anemia and familial epistaxis was thought to be satisfactorily established. Two transfusions were given.

Ileostomy was performed, December 27. Convalescence was uneventful. The icteroid tint disappeared, and the blood steadily improved. Jan. 14, 1925, the erythrocytes numbered 4,050,000, the spleen was definitely smaller, and the patient returned home. He did quite well for a month or more, but had one attack of epistaxis and bled once or twice from the ileostomy. He returned, March 11. He had grown weaker and paler during the preceding two or three weeks. The erythrocytes numbered 1,570,000, and the spleen was just palpable. Thus far (April 15), eight transfusions have been given without material improvement. Daily attacks of epistaxis have occurred. The platelet count has been more than 200,000, and the bleeding time has not been prolonged. Various coagulants have been ineffective. Direct transfusions controlled the epistaxis temporarily, slightly more than citrate transfusions. Radium over the spleen also seems to have been effective. However, the epistaxis continues to recur. April 11, the erythrocytes numbered 1,900,000. The patient eats well, does not show a definite icterus, and has no sense of excessive fatigue.

Examinations of the ileostomy drainage for blood have been negative. Examinations of the duodenal contents have shown no dark bile and no urobilinogen. Urobilinogen has not been present in the material from the ileostomy, or in the urine. Glossitis has not recurred, but an occasional aphthous ulcer has been present. Paresthesias are not troublesome.

SUMMARY OF CASE FINDINGS

Although Patient 1 died from cerebral hemorrhage after six weeks, the blood count and color had been improved without medication to approximately normal. Patient 2 was in very poor condition at the time of operation and had been ill for a year preceding operation. Three courses of hospital treatment and fourteen transfusions had been necessary. Since operation he has been in good health for eleven months, with the erythrocytes gradually increasing to 3,900,000; the paresthesias have disappeared, and the anemia has not recurred. Patient 3 improved after operation; the erythrocytes were held at 2,750,000 for about four months. She died about five months after operation from an acute respiratory infection. Patient 4 improved for four months after operation. There was then a recurrence of the anemia and two transfusions were given. The condition at present is satisfactory. Patient 5 has maintained his condition for more than four months without medication. Patient 6, who also had familial epistaxis, improved rapidly after operation, the erythrocytes rising to 4,000,000. He returned the third month with a recurrence of the epistaxis; the anemia also recurred, and both have persisted. The erythrocytes number less than 2,000,000, in spite of transfusions. At present, however, he is improving.

The patients have all shown the temporary improvement that so frequently follows any treatment for pernicious anemia. All have maintained a good appetite, even with the recurrence of anemia. They all lost the icteroid tint, and it did not reappear even in those who later became anemic. Glossitis recurred in only one case when irrigation of the colon became difficult, and this disappeared in a few days after the colon could be flushed. Probably the most striking feature has been the disappearance of paresthesias in all but one case, in which there was very marked improvement. This patient had moderately advanced cord changes and walked with extreme difficulty; even so, the paresthesias have not been troublesome since ileostomy, and the patient is able to walk without assistance. One patient showed slight improvement objectively and on neurologic examination.

Two patients of the series died from conditions unrelated to pernicious anemia. Two have done unusually well. Two have had a recurrence of the anemia. One patient, who had very marked manifestations of the disease, has been in excellent condition for eleven months.

Ileostomy excludes the colon so far as the absorption of deleterious substances which might be contained in fecal material is concerned; it may not, however, eliminate the possibility of the absorption of toxic material resulting from bacterial growth within the excluded colon, although this possibility has been reduced to a minimum by flushing the colon daily with sodium chlorid solution. Besides excluding the colon, ileostomy presumably establishes more complete drainage of the ileum, unless it is assumed that the level of physiologic disturbance was originally higher than the level of the ileostomy.

In view of the recurrence of anemia in two patients, it might be inferred that exclusion of the colon, together with improved drainage of the ileum, does not directly influence the anemia of pernicious anemia. This statement should be qualified, however, by the fact that insufficient time has elapsed to judge of the effect on the anemia, and by the possibility that physiologic drainage may not be produced by ileostomy in certain cases. The very definite disappearance of the paresthesias and the glossitis indicates that absorption of toxic material from the colon and ileum has not yet been eliminated as a factor in those features of the disease. The disappearance of urobilinogen from the urine, the duodenal contents, and the material from the ileostomy, except during short periods when ileostomy drainage was not satisfactory, may be significant. The reduction in the amount of biliary pigment may, however, be due to the reduced area in which resorption of pigment can occur. The increase of urobilinogen, when obstruction of the ileostomy occurs, suggests that this substance may be formed in the intestine, possibly as a result of bacterial action.

An interesting theory of cholesterol deficiency, as a result of the loss of cholesterol through the intestinal tract in cases of pernicious anemia, could be elaborated. The deficiency of cholesterol would be likely to cause permanent damage to the conduction paths of the nervous system and to the erythrocytes, and this deficiency may also be partly overcome by elimination of the colon and improved drainage of the ileum.

Ileostomy cannot at present be advocated as a therapeutic measure, but in small groups of cases it is justifiable until its effect is definitely known. The procedure alters certain features of pernicious anemia, and may lead to more important results.

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

A REVIEW OF FOUR HUNDRED AND FIFTY-FOUR CASES IN WHICH THE FREDET-RAMMSTEDT OPERATION WAS PERFORMED*

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The data that form the basis of this paper have been derived from a study of 454 cases of hypertrophic pyloric stenosis in infants operated on at the Babies' Hospital and elsewhere by Dr. William A. Downes and myself. In 1914, Dr. Downes adopted the operation of extramucous partial pyloroplasty as a routine. This procedure, suggested by Fredet[1] in 1910, was carried out by Rammstedt[2] in 1912 and is now generally known as the Fredet-Rammstedt operation. In 1920, Dr. Downes[3] reported 175 personal cases in which operation was performed by this method. In the period between Jan. 1, 1920, and April 1, 1925, there were 279 additional cases, in which eighty-two operations were done by Dr. Downes and 197 by myself.

In reviewing this group, it is my purpose to point out that the operative procedure used is curative and its result permanent, and that the so-called operative mortality is largely that of delay, either in diagnosis or in choosing surgical treatment. Accumulating experience confirms my belief that the question of operation should be considered as soon as the diagnosis is made, and that operation should be carried out in all but mild cases in which the symptoms are relieved by medical treatment within one week. The duration of symptoms prior to operation is probably the most important single factor affecting prognosis. In an analysis of 163 cases all included in this series, Goldbloom and Spence[4] show that among infants weighing 7 pounds (3.2 kg.) or less, there are three and a half times as many deaths as among those whose weight is more than 7 pounds. In breast-fed babies, when the loss in weight is less than 20 per cent. of the best weight and the symptoms have been present less than four weeks, the mortality is less than 3 per cent.

During the last ten years, there has been a gradual reduction in mortality, which is to be attributed not only to an increase in the proportion of favorable cases, but also to certain changes in the care of patients before and after operation. In the period from Jan. 1, 1923, to April 1, 1925, 130 patients were operated on, with eleven deaths, a mortality of 8.5 per cent. Included in this group were thirteen private patients with no deaths. Of the entire series, sixty-seven died, a mortality of almost 15 per cent. The general mortality for the first 175 cases of this series was 17.1 per cent., and there was very little difference in the results in private and in ward patients. The contrast, however, is striking in the 279 patients operated on since January, 1920. Forty private patients were operated on with one death, and 239 ward patients with thirty-six deaths.

All deaths in the hospital following operation are classed as operative deaths. Thirty-three patients died in collapse in from two to seventy-two hours after operation. In this group the average age was 9 weeks, with a history of symptoms for six weeks. The weight averaged 6.1 pounds. Twenty-two patients died in from five to twenty-six days. In two instances necropsy disclosed acute gastro-enteritis. In two patients, bronchopneumonia was found. In another dying on the twenty-first day, a small hematoma was found at the site of the pyloric wound. Severe infection of the wound from a preexisting omphalitis was the cause of death in two cases. Other necropsies were negative.

Hemorrhage was responsible for the death of five patients: Two of these died from bleeding from the abdominal wound and two from bleeding from the wound in the pylorus. One, apparently a true hemophiliac, died on the third day from continuous oozing from the pylorus and the abdominal wall.

Six deaths occurred from peritonitis. Two were in cases in which the duodenum had been accidentally opened. Two occurred early in the series, when the operation was modified by passing a bougie through the pylorus by means of a small opening in the stomach. One patient died twelve hours after an operation for an acute intussusception, which developed on the second day after operation.

PATHOLOGY AND CLINICAL PICTURE

The pathology and clinical picture of this condition have been clearly set forth in many articles in recent years.[5] The etiology has given rise to endless discussion, and remains obscure. The weight of evidence is in favor of a primary developmental hyperplasia of the circular muscle fibers involving the pyloric ring and the antrum. The longitudinal layer of muscle fibers and the submucous coats are usually quite normal. The walls of the stomach are somewhat thickened, and its cavity is commonly dilated. The pylorus forms a tumor, which varies in size from that of the distal phalanx of the little finger to that of the distal phalanx of the thumb, according to the age and size of the patient. The hyperplasia is probably congenital. It has been noted in a seven months fetus[6] and in several instances within a few days or hours of birth. The hypertrophy alone apparently does not often produce sufficient narrowing to cause symptoms in infants. Not until spasm has been added do symptoms appear. I am, however, of the opinion that, in all cases, hypertrophy precedes spasm. It is definitely known that the hypertrophy continues long after the spasm has subsided. In every instance in this series there was a definite, demonstrable pyloric tumor.

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* Read before the Section on Surgery, General and Abdominal, at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Fredet, Pierre: Rapport au VIe Congres de gynécologie, d'obstétrique et de pédiatrie, Septembre, 1910; La stenose du pylore par hypertrophie musculaire chez les nourrissons, Bull. et mém. Soc. de chir. de Paris **47**: 451 (April 6) 1921.

[2] Rammstedt, C.: Operation der angeborenen Pylorusstenose, Med. Klin. **8**: 1702, 1912; Zentralbl. f. Chir. **40**: 3, 1913.

[3] Downes, W. A.: Congenital Hypertrophic Pyloric Stenosis, J. A. M. A. **75**: 228 (July 24) 1920.

[4] Goldbloom, Anton; and Spence, R. C.: Prognosis in Operated Cases of Hypertrophic Stenosis of Pylorus, Am. J. Dis. Child. **19**: 263 (April) 1920.

The clinical picture is striking and quite uniform. The observation that the condition usually occurs in breast-fed male children, frequently the first-born, is confirmed by the figures in this group. A previously healthy baby, most frequently in the second to the fourth week, begins to vomit forcibly and persistently. Shortly there is marked constipation, little urine is passed, and there is progressive loss of weight.

The onset is frequently abrupt, but may be gradual and occasionally dates from birth. In this series it varied within wide limits, but in the majority, symptoms began in the second to the fourth weeks. Onset after the fifth week is rare, and after the eighth week exceptional.

The vomiting is characteristic. It is forcible and projectile. Sometimes the food is shot out of the mouth to a distance of several feet. This may be repeated after each nursing and the amount of vomitus is large, usually the entire contents of the stomach. If the vomiting is infrequent, the amount ejected at one time is often larger than the amount of the last feeding. There is always gastric retention, which may be estimated by means of a soft rubber catheter to which is attached a simple suction apparatus. Definite gastric peristaltic waves may be seen, and the tumor palpated. Throughout the course of the disease there is no fever, and the infant usually remains hungry.

It is asserted that persistent spasm without hypertrophy may give a picture identical in all respects save the presence of the tumor. The truth of this assertion has never been established to my satisfaction. Occasionally, exploratory operation has been undertaken in vomiting babies and no definite pathologic cause for the vomiting found. In such cases, I see no indication for any operation on the pylorus.

DIAGNOSIS

If the condition is kept in mind, the diagnosis may be made promptly in almost every instance, and is not a matter of opinion, but is demonstrable. A palpable pyloric tumor and gastric peristaltic waves in combination occur in no other condition. The history, if obtained from an intelligent mother or nurse, is valuable and often typical. There has been much discussion as to the diagnostic value of the tumor. I consider it the most important sign, and am confident that it may be felt in all cases if sought in the proper manner.

The palpation of the tumor is most easily carried out after the stomach has been emptied by means of a soft rubber catheter and while the child is kept quiet with its usual feeding or a sugar pacifier. Usually lying to the right of and above the umbilicus, the nodule may be made out high up under the liver or even in the midline, just below the ensiform cartilage. It is a small, oblong, movable mass, about the size of the distal phalanx of the little finger, and imparts a sense of almost cartilaginous hardness through the abdominal wall. The consistency of the tumor varies as the muscle comprising it is contracted or relaxed. At the time of relaxation, the pylorus may be scarcely made out. When its position has been located, the contraction and hardening of the pylorus may be stimulated by gentle kneading with the finger.

The more emaciated the infant, the more obvious the tumor. In early cases in which there has been little loss of weight, it is more difficult to make out, but patient examination will almost invariably be rewarded. In the 454 cases reported, it has been felt in every instance but one. During the same period, there were three cases in which the anteoperative diagnosis of a tumor at the pylorus proved incorrect.

Deep, regularly recurring peristaltic waves, passing from left to right, may be seen in practically every instance, if the epigastric region is inspected after the stomach is filled and while the child is quiet. These waves were observed in all but three cases of this series. Congenital occlusion of the duodenum may give a similar picture, but this condition is very rare and the presence of symptoms from birth and the bilious character of the vomitus generally serve to differentiate it from pyloric stenosis. The significance of peristalsis depends on its degree. Slight peristaltic waves may be seen even in apparently normal infants.

The characteristic projectile vomiting is frequently observed during the examination. The secondary symptoms of loss of weight, constipation and scanty urine are merely evidences of starvation.

In my opinion, roentgenography is indicated only in doubtful cases. A. A. Strauss[7] states that the fluoroscopic examination is the most important means of making an accurate diagnosis and that it not only shows whether the condition is pyloric stenosis but classifies it immediately as a medical or a surgical case. In his hands this method has proved accurate in every instance. If this or any other method of early differentiation between cases requiring medical, and those requiring surgical care can be successfully developed, a tremendous advance in the handling of pyloric stenosis as a whole will have been made.

CHOICE OF TREATMENT

There are so many discrepancies and differences of opinion in the literature of pyloric stenosis that, having no personal experience with the medical treatment, I do not feel able correctly to interpret or discuss its results. Whatever these results may be, there seems to be no doubt that, in a large proportion of cases managed by medical methods, the treatment extends over a period of weeks and months, during the whole of which careful medical supervision and expert nursing are essential. The dangers of protracted hospital care in infants are well known. In addition to its practical difficulties, this prolonged convalescence brings up the questions of increased susceptibility to infection and of possible permanent damage to the growing infant, from impaired nutrition at a critical stage in its development.

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[5] Holt, L. E.: Hypertrophic Stenosis in Infants, J. A. M. A. **68**: 517 (May 26) 1917. Still, G. F.: Congenital Hypertrophic Stenosis of Pylorus, Brit. M. J. **1**: 579 (April 7) 1923.

[6] Dent, C. T., quoted by Cautley: Diseases of Children, 1910, p. 265.

[7] Strauss, A. A.: Clinical Observations of Congenital Pyloric Stenosis, J. A. M. A. **71**: 807 (Sept. 7) 1918.

No medical treatment that involves taking a breast-fed baby off the breast is admissible. Goldbloom and Spence show that the mortality in artificially fed babies is three times that in the breast-fed.

If the condition is recognized shortly after the onset of symptoms, medical treatment may, in my opinion, be tried in mild cases and persisted in if the symptoms are relieved within one week. There are certain cases that respond promptly; vomiting ceases and the infant gains steadily. Obviously, there is no indication for surgery in this type. Patients first seen in the later stages should be operated on as soon as possible.

PREPARATION FOR OPERATION

Infants in reasonably good condition, who are not dehydrated, may be operated on within twenty-four hours of admission. Even in such patients a hypodermoclysis of 3 per cent. glucose solution is administered about twelve hours before operation.

In the case of the emaciated dehydrated infants whose symptoms have existed for a long time, our procedure has changed materially in the last few years. Formerly these patients were operated on immediately. Now operation is delayed for from twenty-four to seventy-two hours.

During this time, the body heat is carefully maintained, frequent hypodermoclyses of 3 per cent. glucose solution administered, and from one to three transfusions given. Direct transfusion into a peripheral vein is the method employed. The improvement brought about by these methods in apparently moribund infants is often remarkable.

Since we have practiced delay in operating on patients in poor condition, two infants with pyloric stenosis have died unoperated on in the hospital. In one, death occurred on the third day after admission. In the other, complications rendered operation out of the question. It is interesting to note that in the last 130 cases there have been only four deaths from collapse within seventy-two hours after operation, as opposed to twenty-nine deaths from collapse in the preceding 320 cases. The percentage of deaths from collapse shows a reduction from 9 to 3.

OPERATION

For those patients whose nutrition is good, ether is the anesthesia of choice. For those in poor condition, I have recently preferred local anesthesia, and it has been used in thirty-five cases in this group. When local anesthesia is indicated, the child is kept quiet with a sugar pacifier and the line of incision is infiltrated with 1 per cent. procain. It is essential that the posterior rectus sheath and peritoneum be widely infiltrated. In nine out of ten cases, the operation may be completed under local anesthesia alone. In the tenth case it will be necessary to give a little ether to close the incision.

Immediately before the operation, the stomach is emptied by means of a catheter. The incision is from 3 to 4 cm. in length, through the right rectus muscle, 1 cm. to the right of the midline, and if possible so placed as to overlie the right lobe of the liver. The pyloric end of the stomach is picked up with plain forceps and the pyloric tumor delivered through the wound. The tumor is held between the thumb and forefinger of the left hand. On the anterior surface of the pylorus, at the most bloodless part, which is usually the junction of the upper and middle thirds, an incision involving only the peritoneum and the superficial muscle fibers is made. This incision begins just proximal to the duodenum, is parallel with the lumen of the pylorus, extends well onto the anterior wall of the stomach, and varies in length from 1.5 to 2.5 cm. A small straight pair of mosquito forceps is inserted into the center of the incision and gently spread. The undivided portion of the muscle tears, thus exposing the mucous membrane. Continuing this blunt dissection from the stomach toward the duodenum, the division is carried in the line of cleavage to the duodenal ring. The separation of the muscular from the mucous layer should be sufficiently complete to permit the latter to protrude freely into the wound, beyond the level of the peritoneal covering.

Toward the duodenal end, the transition from the thick walled pylorus to the thin duodenum is sudden, and care is necessary to avoid tearing the mucous membrane. On the stomach side, the tumor gradually merges into the wall of the stomach and there is little danger of entering the lumen.

Bleeding may usually be controlled by pressure with hot pads. Occasionally it is necessary to underrun one or more vessels in the cut edge with fine silk ligatures. Toward the duodenal end of the incision, a small vessel just beneath the muscular layer may be ruptured. Bleeding from this source is easily controlled by suturing over the bleeding point a small piece of muscle obtained from the rectus. No attempt is made to cover the wound with omentum.

The abdominal wound is closed in layers, a continuous suture for each layer, additional interrupted sutures in the rectus sheath and three retention sutures. Fine chromic catgut is used for the peritoneum and fascia, silk for the skin and retention sutures. A small dressing is securely fixed with adhesive strapping. Sutures should be removed about the tenth day.

ACCIDENTS AND COMPLICATIONS

The duodenum has been opened five times in this series. The opening should be repaired with fine silk sutures. Hemorrhage from the pyloric wound has occurred four times, and careful hemostasis is essential. Hemorrhage from the abdominal wound has occurred in a greater or less degree in eight patients. The use of a continuous suture in each layer of the abdominal wall and accurate apposition of the skin edges reduces this complication to a minimum.

Material infection of the wound is rare. Not infrequently there is some irritation at the suture exits, which clears up immediately after the sutures are removed. In infants in whom omphalitis is present at the time of operation, infection of the wound usually occurs in spite of every precaution.

Separation of the wound edges occurred in several instances. In two, resuture of the wound was necessary. In four there was ventral hernia. One patient was operated on, two were cured by strapping and the growth of the child. One, in a recent case, persists at the present time.

POSTOPERATIVE MANAGEMENT

The postoperative management has been comprehensively discussed by Morgan.[8] Skilled nursing and an adequate supply of breast milk are as essential as is the proper execution of the operation. When general anesthesia has been used, the head of the bed is lowered for an hour or two, to prevent aspiration of mucus. The body heat is carefully maintained. Hypodermoclysis of 3 per cent. glucose solution is given as indicated. Repeated transfusions are often of great value.

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[8] Morgan, E. A.: The Postoperative Management of Pyloric Stenosis, Am. J. Dis. Child. **1**: 245 (April) 1916.

The tolerance for food in those infants who have been starved over long periods is markedly reduced. Great care is therefore necessary in increasing the diet. One or two hours after operation, 15 c.c. of water is given, followed in one hour by 4 c.c. of breast milk with 4 c.c. of barley water. The breast milk is repeated every three hours, eight feedings a day, and is alternated with the water. Both are gradually increased, and at the end of forty-eight hours the child is usually taking 30 c.c. Thereafter the feedings are increased 5 or 10 c.c. daily until the caloric requirements of the child are met. During the first few days, the administration of water by mouth is of great importance.

For the first four or five days, feedings are by means of a medicine dropper. A soft rubber catheter may be passed into the stomach before each feeding, to provide for the free escape of gas. Every effort should be made to preserve the mother's supply of milk. The child should nurse on the sixth or seventh day, in some instances sooner. The nursings are increased daily and are carefully supervised. If the quantities obtained are too small, the nursing should be supplemented. If it is necessary to discharge the child on a formula, this should be gradually substituted for the breast milk, beginning on the tenth or twelfth day after operation. The average stay in the hospital of breast-fed infants was fourteen days; of those artificially fed, twenty days.

RESULTS

Dr. Martha Wollstein,[9] the pathologist at the Babies' Hospital, in a study of twenty-three specimens removed in from twenty-four hours to two years after operation, has shown that the Fredet-Rammstedt operation cures the condition, in contrast to the operation of gastroenterostomy, which leaves the pylorus unchanged.

In twenty-five days after operation, the stomach is normal in size and the pylorus but slightly firmer than normal. In six weeks only a delicate scar remains. In only one instance has the operation proved inadequate.

Both Dr. Holt and Dr. Downes have analyzed the follow-up results in groups of cases, all included in this series, with the conclusion that there is no interference with normal development. Many cases have now been followed for varying periods up to ten years, and in no instance has there been evidence of pyloric obstruction or of any symptoms referable to the operation.

CONCLUSIONS

1. The diagnosis may be made promptly and with great accuracy.
2. The Fredet-Rammstedt operation is simple, curative and permanent in its result.
3. Convalescence is rapid, and the infant returns almost at once to normal development.
4. The constant progressive decline in mortality strongly suggests further improvement in this direction.
5. In view of the results obtained by surgery in this series during a period of more than ten years, there appears to me to be little justification for a delay which turns a good operative risk into a bad one, substitutes a long accidented convalescence for a brief, uneventful one, and fails to restore promptly a growing infant to a satisfactory state of nutrition at an important period in its development.

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ABSTRACT OF DISCUSSION

Dr. Charles G. Mixter, Boston: The symptoms of congenital hypertrophic stenosis of the pylorus are clear cut and definite. The reason the surgeons see so many cases in the advanced stage of emaciation and protracted vomiting is the failure to recognize the condition on the part of the pediatrician who treats the patient on the basis that he is dealing with nutritional disurbances. As in intussusception, the diagnosis is now being made early more frequently and with a consequent improvement in the statistics. At the Children's Hospital in the last ten years we have had 195 children operated on by the Rammstedt operation by four surgeons, with a mortality of 9.5 per cent. The fatalities were almost unquestionably directly attributable to starvation and dehydration. In no case has perforation or peritonitis been attributed to the operation, though no attempt has been made to cover any defect of the mucous membrane by pyloroplasty or omentum. To have a low mortality, the diagnosis must be made earlier and the operation must be undertaken promptly and particular attention must be focused on the preoperative preparation and the postoperative care. The conservation of body heat and the avoidance of rough handling are essential and should be impressed on every member of the hospital staff. Speed, gentleness and hemostasis are the essentials of the operation. The urgent need for food should be met by the institution of feeding within a few hours of the close of the operation. In two instances in our series, death was found to be attributable at necropsy to incomplete section of the pyloric tumor. Particular attention should be focused on a thing which I believe it is easy to overlook; namely, the constricting fibers. Should any doubt exist as to the patency of the opening, a small amount of water should be injected at the beginning of the anesthetic to empty the stomach of its contents and gas.

Dr. Alfred A. Strauss, Chicago: I should like to emphasize the fact that pyloric obstruction, whether in the adult or in the infant, is never an emergency, and that the high mortality that Drs. Downs and Bolling had at first was due to lack of preparation of the patient; namely, by hypodermoclysis, intravenous glucose injection and transfusion, the most important of all being the blood transfusion. A patient who is brought for operation does not have to be operated on, especially if moribund, in two or three hours. It is much better to prepare that patient for from forty-eight to seventy-two hours by continuous hypodermoclysis of glucose and finally by blood transfusion. Many of our infants have received two blood transfusions before operation and one after. The next important point following shock is perforation or hemorrhage. For this reason I have made a muscle flap and brought the omentum over the tumor. Our mortality has been 3.2 per cent., and we feel that it is not due to expert surgical skill but to the preparation of these patients with glucose and blood transfusion. We had no deaths due to peritonitis or leakage. The other point that Dr. Bolling made was regarding the feeling of the tumor. I can very readily see how in an experience of 400 cases one would become expert at that; but if a man sees only five or six cases a year, he cannot become expert. Early in my work I used the roentgen ray. In a few minutes, by giving mother's milk with barium and rotating the child to the right side, one will see the typical contractions of the peristaltic waves which are absolutely pathognomonic of congenital pyloric stenosis. If at the end of four hours, 80 per cent. or more has passed through, that child does not need an operation. In ten years' experience with 324 cases, we found more than 100 cases that we considered medical. There is nothing we can estimate more accurately than the emptying time in these infants. The last point is the differential diagnosis. Every little while some one reports cases of pyloric stenosis in infants 3 or 4 days old. I have been called three or four times a month by the Chicago Lying-In

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[9] Wollstein, Martha: Healing of Hypertrophic Pyloric Stenosis After the Fredet-Rammstedt Operation, Am. J. Dis. Child. 23:510 (June) 1922.

Hospital to operate for a congenital pyloric stenosis in infants 3 or 4 days old. In ten years I have never operated on such a patient in that institution because in every case, after the infant was kept at the breast for ten days, the symptoms disappeared. In case of spasm of the gastro-intestinal tract not due to pyloric stenosis, one should not operate; these are cases of pylorospasm without true hypertrophy of the pylorus.

Dr. Sidney V. Haas, New York: About ten years ago I found that there was a group of cases that had as a symptom of a general spasticity the tendency to vomit. I described these cases under the term of functional spasm. This condition was relieved by atropin, and I said at that time that I believed pyloric stenosis would fall into this group. No one could find fault with the results of Downs and Bolling in the operative treatment of this condition, and when conditions are similar it is perhaps often the method of choice; but one must have a babies' hospital, with all the facilities for after-care, such as the Children's Hospital in Boston, to get such results as we have heard this afternoon. If one will look over the literature, one will find that with this operation in England the mortality was as high as 61 per cent. During the last ten years I have seen about 100 cases of pyloric stenosis. These I have treated medically without exception. Some babies have been operated on because they were taken away — cases I had seen in consultation. No cases that I had under my care ever fell into the hands of either Dr. Downs or Dr. Bolling. Recently one baby had to be operated on as there was a relapse. The medical treatment of this condition is just as valuable as the surgical. It is a functional condition, a disturbance of the autonomic nervous system. It can be cured by persistent gastric lavage with saline solution. The spasticity can be reduced. The reason the Rammstedt operation is superior to any other operation that has been attempted is that it does the same thing by severing the nerves through which the reflexes are produced. If the nerves are not severed, the results are incomplete after resection of the tumor. That tumor always spells an operative case is not true, for repeatedly I have demonstrated these tumors and complete obstruction by the roentgen ray. This condition is rare, but it does occur. The final results of medical treatment are just what Dr. Bolling has spoken of for the surgical treatment. Some of these children grow up to be perfectly splendid. One child I followed for nine years. The only death I had was from an acute bronchitis. The cure of these children does not call for hospital care. Nearly all my patients have been treated at home. It is true that some of these require no treatment. The treatment consists in giving atropin sulphate, 1:1,000, in milk or water.

Dr. Richard Walker Bolling, New York: I should like to congratulate Dr. Mixter and Dr. Strauss on their results. I think the preoperative treatment is very important and has a definite bearing on the mortality, but early diagnosis and early surgical treatment will more or less eliminate the necessity for this. I do not believe this accounted entirely for our higher mortality in the beginning, that we did not use the various forms of preoperative treatment. I believe if all of you begin to do pyloric stenosis operations and expect to get Dr. Strauss' results, some of you at least will be disappointed. Dr. Haas has very kindly demonstrated my point about the relapses that occur during the medical treatment.

The Doctor and the Hospital.—The physician appointed on a hospital staff has an obligation to give adequate time and the best service that is in him to the hospital. He draws good from his service only in proportion to the work he puts into it. A hospital service should mean to a man the opportunity to perfect himself in his profession. If he is a surgeon, he becomes manually expert and improves his surgical judgment. If he is a physician, he sees many more patients at the hospital than he would outside and thus his clinical experience broadens.—F. A. Washburn, *Modern Hospital* 20:164 (Feb.) 1923.

ARSENIC POISONING

REPORT OF TWENTY-EIGHT CASES *

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At the Elks' National Home, Bedford, Va., following the noon meal, Nov. 10, 1924, twenty-eight of the Elks became violently ill. The illness was so severe that three were dead and many were moribund when we saw them in consultation ten hours later. At that time Dr. J. A. Rucker, the attending physician, had made the provisional diagnosis of arsenic poisoning from the clinical symptoms. Acting on this suggestion, a Marsh's arsenic apparatus was quickly set up and large quantities of arsenic demonstrated to be present in cider contained in a small barrel from which some of the Elks had been served at the noon meal. It was later learned that the barrel had contained an arsenic compound used for spraying trees.

In the beginning, the symptoms were practically the same in all cases, varying only in intensity, time of appearance and rate of progression.[1] Many began to vomit before leaving the table. The vomitus was at first gastric contents, followed shortly by clear mucus, which became blood stained and later almost pure blood mixed with bile. Within from fifteen to twenty minutes of the onset the bowels began to move, the movements at first being normal in character but rapidly changing to a severe, bloody diarrhea.

Coincident with the diarrhea there was an almost complete suppression of urine, a marked cramping of the skeletal muscles, a terrific headache, tremor, general nervousness, vertigo, and the typical picture of beginning collapse. Some of the patients were in profound shock within half an hour of the onset; in others the progress was slower and less intense. As the vomiting and diarrhea progressed there developed an intense thirst, dysphagia, sore and parched tongue, and a burning in the esophagus and stomach. Abdominal tenderness with slight distention manifested itself within three hours, followed by dim vision, flashes and spots before the eyes. After about twelve hours, herpes appeared around the nostrils, lips and anus. What small amounts of urine were passed at this time were of the low, average specific gravity of 1.004, showed no albumin or sugar, and gave only a trace of blood microscopically.

With the onset of collapse, in spite of good medical treatment and excellent care by the home, some developed coma and died, the first death occurring in six hours. The second occurred in seven, the third in nine, the fourth in ten, the fifth in thirteen, the sixth in fifteen, the seventh in sixteen, the eighth in eighteen, the ninth in thirty-one and the tenth in forty-five hours. The eleventh patient passed away on the fifth day, the twelfth on the twenty-second day and the thirteenth on the thirtieth day after the taking of the poison.

Ten of these deaths occurred in the acute stage, and the other three during the subacute stage, into which the patients had passed with a cessation of the acute symptoms on the second day. At this time the nausea and vomiting tended to clear up, though persisting irregularly in a few. The picture of collapse also improved, passing into one of prostration, exhaustion and extreme weakness, which confined the patients to bed for several weeks. General pain continued in severe form in nine and in mild form in two, while five experienced acute pain locally in the head, abdomen, calves of the legs or joints only.

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* *From the Medical Department of the Jefferson Hospital.*

[1] Three colored servants were deterred by the metallic taste from taking more than a sip or two and developed only slight symptoms, from which they quickly recovered. They are, therefore, not included in this report.

During this period all the eighteen showed a dirty, brown coated tongue and complained of a bad taste in the mouth, with loss of appetite. Dyspnea, tachycardia and a feeble, irregular pulse were marked features. Vertigo, dim vision and visual phenomena were retained for two weeks in fifteen. On the fourth day, conjunctivitis and a diffuse, facial erythema appeared on one patient, while herpes around the nostrils and lips of seven and about the anus of an eighth persisted until the tenth day. From the fifth to the seventh day, severe epistaxis complicated one case with a coagulation time of twelve minutes. In another patient, hiccup appeared with the initial vomiting and till the tenth day resisted all therapeutic measures. Nine had pronounced constipation, one fecal incontinence, and the others normal bowel movements with occasional diarrhea. As the constipation relaxed, the abdominal distention subsided. In sixteen cases, the liver was distinctly enlarged; in seven, the spleen was felt one finger breadth below the costal margin. General tremor subsided on the second day, but at the end of two weeks a fine tremor of the hands and fingers remained in fourteen. The deep reflexes, which had been hyperactive in thirteen cases, began to return to normal on the fifth day. Hypotension was still a marked feature in twelve patients on the fourteenth day. The initial suppression of urine slowly passed off, leaving three patients incontinent. On the fifth day the total daily output was still much reduced, with an average specific gravity of 1.010. Urinalysis at this time showed an acid reaction in fifteen and an alkaline reaction in two cases; a slight amount of albumin in only four; no sugar; many bacteria in six; quantities of epithelial and pus cells, with hyaline, granular and white blood cell casts in all. A week later the only change was the appearance of albumin in a fifth case, and an increase of the average specific gravity to 1.016.

Table 1.—*Blood Examinations on the Fifth Day*

	Range	Average
Red blood cells	4,480,000—5,920,000	5,150,000
Hemoglobin (Sahli)	85%—95%	93%
White blood cells*	2,800—6,400	4,100
Differential:		
Polymorphonuclear neutrophils	20—55%	36%
Polymorphonuclear eosinophils	2—40	19
Polymorphonuclear basophils	0—2	1
Small lymphocytes	8—27	17
Large lymphocytes	0—3	1
Large mononuclears	10—40	22
Transitionals	1—10	4

* From this item are omitted three cases in which there were superimposed infections: a bronchitis with a white cell count of 10,000; a cystitis with one of 14,800, and an abscess of the arm following laceration, with a leukocytosis of 12,000.

The features were the tendency to polycythemia with leukopenia, and the marked eosinophilia and mononucleosis of the large cell type at the expense of the polymorphonuclear neutrophils and lymphocytes. There were no abnormal or immature forms of either red or white cells. The platelets were apparently much decreased in number.

On the twelfth day the leukocytes were returning to normal (Table 2).

Blood Wassermann and Kahn reactions were run on the seventeen surviving patients on the thirteenth day. Two were four plus and one was two plus, both Wassermann and Kahn tests in these cases showing the same degree of sensitivity.

Table 2.—*Leukocyte Count on Twelfth Day*

	Range	Average
White blood cells	3,400—7,600	4,700
Differential:		
Polymorphonuclear neutrophilis	30—64%	45%
Polymorphonuclear eosinophils	2—16	9
Polymorphonuclear basophils	0—2	1
Small lymphocytes	12—30	24
Large lymphocytes	0—8	2
Large mononuclears	8—25	13
Transitionals	1—10	5

The three patients who died in the subacute stage had become gradually weaker and delirious, passing into coma without complications.

The transition to the chronic stage was gradual, and, five weeks after onset, the fifteen patients who survived the subacute stage presented the symptoms listed in Table 3.

At the end of the fifth week, nine patients complained of feeling generally worse than they had felt during the second week; the others felt better and had fewer symptoms. A repetition of the blood Wassermann and Kahn tests showed no change in the reactions. The urines by this time had returned to normal, the albumin, pus and casts having disappeared. The blood picture was almost normal (Table 4).

Recovery from the symptoms of the chronic stage was very slow, several complaining of general muscle weakness, tingling of the hands, insomnia and headache six months after the poisoning.

TREATMENT

Immediately following the onset, vigorous supportive and symptomatic treatment was given; and nine patients, all of whom survived, repeatedly lavaged their own stomachs with warm water. After the Marsh test had demonstrated an abundance of arsenic, it was decided to use sodium thiosulphate with the hope of

Table 3.—*Symptoms Five Weeks After Onset*

		Number
Constipation		13
Malaise and languor		12
Insomnia		12
General muscle weakness		11
Desquamation		11
Over entire body surface	4	
Over hands, arms or trunk only	7	
General nervousness		10
Pain in arms, abdomen, back or legs with general aching		10
Tingling of hands, arms or feet		10
Numbness of fingers, hands or toes		9
Tremor of fingers and hands		9
Hypotension		8
Impaired vision		8
Dizziness		8
Headache		6
Anorexia, nausea and vomiting		6
Hyperactive reflexes		6
Flushing and paling of skin		5
Heaviness and discomfort in abdomen		4
Paralysis of a hand, arm or toes		3
Impairment of sensation of touch		3
Persistent erythema over face or trunk		2
Conjunctivitis		1
Drooling at night		1
Diarrhea		0
Enlargement of liver or spleen		0
Pigmentation		0

inactivating the remaining arsenic by the production of its nontoxic, insoluble sulphid. At that hour there was available only crude photographers' hypo, which, however, is of practically the same chemical formula as sodium thiosulphate. This sodium hyposulphite was made into 30 grain (2 gm.) doses and given by mouth to all the patients for the first time at 3 a. m., fourteen hours after the cider had been drunk. Most of the patients continued to vomit, but as fast as they did so the dose was repeated and this treatment continued for the next two days. Beginning with the eighth day and continuing until the fourteenth, all the patients received sodium hyposulphite in 20 grain doses by mouth twice a day. Sixty-two hours after the poisoning, seven of the most severely ill patients received 7½ grains (0.5 gm.) of an intravenous preparation of sodium thiosulphate, the first able to be procured. No more was available at the time. On the fifth day, forty-one hours after the first injection, a chemically pure preparation of sodium hyposulphite was administered intravenously in 9 grain (0.6 gm.) doses to all the patients. Thirteen of these eighteen reacted in from thirty to forty-five minutes with chills and a fever of from 99 to 101.2 F., which subsided in a few hours. A large supply of ampules of sodium thiosulphate having been obtained on the sixth day, each patient received 7½ grains intravenously. This dose was repeated on the seventh day and once daily thereafter. On the eighth and ninth days the attending physician considered only six patients sufficiently ill to require it, and one of these refused the treatment after the tenth day. On the thirteenth day none received the intravenous preparation, but on the fourteenth these five were given 15 grains (1 gm.) each, which concluded all sodium thiosulphate therapy.

Table 4.—*Blood Count at End of Fifth Week*

	Range	Average
Red blood cells	4,512,000—5,120,000	4,800,000
White blood cells	5,800— 7,800	6,900
Differential:		
Polymorphonuclear neutrophils	42—68%	59%
Polymorphonuclear eosinophils	1—7	3
Polymorphonuclear basophils	0—2	1
Small lymphocytes	19—34	27
Large lymphocytes	0—4	2
Large mononuclears	3—10	5
Transitionals	1—6	3

COMMENT

At first we were under the impression that the arsenic had come from spray on growing apples, but a good orchardist assured us that such a thing was impossible and stated that one manufacturer this year had shipped arsenic in barrels of a good grade. To this source the cider barrel was eventually traced. It had been bought in the usual commercial way, and there is no reason why such an accident should not occur more frequently.

We could see no immediate result from the use of sodium thiosulphate, and have no comparison for permanent results except the fact that only three patients died after receiving intravenous treatment. The crude sodium hyposulphite might possibly have been given in larger doses by mouth had we been sure of its nontoxic nature. The intravenous preparation of sodium thiosulphate was given as soon as it could be obtained.

Analysis by Froehling and Robertson, Inc., Richmond, Va., of samples taken at the time of the poisoning showed the presence of 3.38 grains of arsenic (As_2O_3) per fluidounce. Most of the Elks drank several glasses of the cider, but because of the vomiting and diarrhea it was impossible to determine the amount retained.

CONCLUSIONS

1. No immediate improvement was observed following the use of sodium thiosulphate. To be of possible value in acute poisoning, it should be given at once and in maximum doses.

2. With the large amount of arsenic used in orchard work, it is surprising that not more cases of poisoning have occurred.

3. Containers of poison should be so constructed or marked that an accident similar to this one would be practically impossible.

CENTRIC PUERPERAL PALSIES [*]

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Centric puerperal palsies are of interest to the obstetrician, the neurologist and the internist. These palsies are usually hemiplegias, though commonly the face, arm and leg are unequally involved. Infrequently monoplegias occur. A primary partial aphasia may be the forerunner.

CLINICAL FEATURES

The comparative rarity of puerperal palsies is shown by the fact that we have been able to add only seventeen cases to those of Lafon,[1] published in his thesis in 1896, giving us forty-two cases to study. We have tried to avoid palsies arising ante partum, intra partum or immediately post partum, as these are more apt to be associated with eclampsia and cerebral hemorrhage. Our interest lies rather with the infectious cases, some with evident *thrombophlebitis in pelvic or femoral* veins, and some in whom these conditions were latent. The striking feature in many of these palsies is the cerebral thrombophlebitis without other evidence of infection. Unfortunately, the case reports in literature are lacking in full details. Many were in primiparas, especially in those who needed instrumental help or manipulation, as version. Fifteen occurred in women between 20 and 30 years of age, fourteen between 30 and 40. The ages of the remainder were not given. The times of the onset of the palsy were, during the first week ten; second week, fourteen; third week, eight; fourth week, two; beyond the fourth week, five, and unknown, three.

The right side was affected in twenty, the left in twelve; in ten simply a hemiplegia was noted, the side not specified.

Aphasia was mentioned in about half the cases, whether right or left, anesthesia of the same side in one fourth of the cases. There were twenty-two recoveries, partial or complete, and twenty deaths. Necropsies were reported in sixteen out of the twenty, with the following findings: cerebral thrombosinusitis and phlebitis, seven; endocarditis, two; intracerebral hemorrhage, three; general septicemia with purulent meningitis, two; thickened meninges, one; serous effusion in right ventricle, one.

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[*] Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Lafon, A.: Contribution à l'étude d'hemiplégie puerperale, Thèse de Paris, 1896.

In twelve of the forty-two hemiplegic women there was a primary thrombophlebitis finally demonstrable, usually in one leg, occasionally in both. Of these twelve, six recovered and six died. Five necropsies were done, with the following findings: cerebral thrombosinusitis and phlebitis in three; purulent meningitis in two as part of a general pyemia, for in one there was also lung abscess, in the other peritonitis.

Of the twenty-two who recovered, six had a frank thrombophlebitis in the femoral vein; four might be attributed to eclampsia or nephritis, and in twelve the cause was undetermined.

That the others had a concealed pelvic phlebitis as the seat of the infections seems likely, as there was no other cause found. In several with detectable phlebitis, the hemiplegia occurred before the latter could be demonstrated, as in the case seen by the senior writer [2] with a colleague. In a few severe postpartum cases, hemorrhage may have been a contributing factor.

The main causes, then, of centric puerperal palsies are cerebral thrombosinusitis and phlebitis arising secondary to thrombophlebitis in the pelvis or leg, frank or concealed; cerebral embolism, and cerebral hemorrhage. Brain abscess and purulent meningitis are part of a general septicemia, usually having evident sites of morbid change other than the intracranial.

PATHOLOGY OF CENTRIC PUERPERAL PALSIES

Apparently the commonest cause is intracranial thrombophlebitis secondary to infectious thrombophlebitis in uterine, pelvic, iliac, femoral or other veins in this region. In puerperal infection, however mild, all the elements necessary to thrombus formation are present—bacteria to injure the intima, and sluggish circulation to favor the deposition of blood platelets on the necrotic wall, which sets in motion the chemical changes leading to clotting. In puerperal infection, streptococci, staphylococci and other pyogenic bacteria are chiefly concerned, and they all show a great predilection for the veins. This thrombophlebitis may remain localized in the pelvic region, but often it spreads by means of the blood stream and lymphatics elsewhere. It is from these pelvic foci that cerebral thrombophlebitis and embolism arise, causing puerperal palsies.

The degree of latency in pelvic thrombophlebitis is remarkable. Sudden aphasia or hemiplegia, or more often pulmonary embolism may be the first evidence of its presence. Pain and swelling are late phenomena in phlegmasia; they are apt to occur only with beginning occlusion of the vessel; the march of the thrombosis from the uterine veins to the femoral vein has been silent.

Sudden embolism, usually pulmonary, is often the herald of an unexpected pelvic thrombophlebitis. Such latent attacks arise more often from pelvic or uterine thrombophlebitis than from phlegmasia. Even in fatal intracranial thrombophlebitis the extent of the phlebitis in the uterine or broad ligament veins may be slight, or it may be insusceptible of definite demonstration. Williams [3] once found at necropsy the femoral vein and all its branches occluded, yet careful measurements were necessary during life to detect any difference in the size of the leg.

The necropsy may read, "Uterus small, firm, clean, appendages normal," as in Hunt's [4] well studied case, and yet the infection had produced widespread fatal cerebral thrombosinusitis and phlebitis.

CEREBRAL EMBOLISM

Mitral stenosis and endocarditis, acute or recurrent, may lead to puerperal palsy from cerebral embolism. Endocarditis is commoner in the left side of the heart, and the way to the brain is direct.

The relationship between pelvic or femoral thrombophlebitis and cerebral embolism is less easily explained. No case of puerperal paradoxical embolism with necropsy was found. The question arises: Can an embolus, however small, pass through the pulmonary capillaries? Siemerling [5] and Daels [6] admit the difficulty, but think that small emboli may pass.

However, it is commonly admitted that bacteria may circulate with the blood corpuscles. Once having passed the pulmonary capillaries, these bacteria may set up a new morbid process on a heart valve or in a vessel on the systemic side of the circulation. From this new thrombo-angiitis, emboli may arise. This may explain some of the sudden hemiplegias with a well recognized focus in the femoral vein. There may be a closer relationship between the frequent pulmonary embolism of the puerperium and cerebral embolism than we recognize, for the clinical diagnosis of pulmonary embolism is frequently missed both in puerperal and general medical cases. There is some reason for our clinical shortcoming, as Karsner and Ghoreyeb [7] found experimentally that a simple embolus interfering with less than an entire lobe of a lung gave origin to little circulatory disturbance, owing to the rich anastomosis of the pulmonary artery between its own branches. Large emboli block the pulmonary artery and kill from the sudden strain thrown on the heart. Smaller emboli give a picture of pleurisy or pneumonia, some perhaps of pulmonary edema, and some remain quiescent.

Pulmonary embolism is the commonest cause of puerperal sudden death otherwise unexplained. Pulmonary embolism, frank or latent, is common during the puerperium, especially in thrombophlebitis, pelvic or in the leg. In the resulting pulmonary infarction, the morbid changes due to a mycotic embolism may involve the pulmonary artery, and a new seat of thrombo-angiitis may arise and emboli be swept to the left side of the heart and the cerebrum. Small intracerebral infarcts may be symptomless if they occur in the meninges. If a small vessel alone is involved, there may be a temporary lapse of consciousness or none at all. There may or may not be variously localized palsies. If a large vessel is occluded, apoplexy is suggested. In puerperal infarction, however small, since the emboli are mycotic, the end-result is thrombophlebitis, and possibly puerperal meningitis and abscess. Again we are apt to forget the lymphatic vessel as a route of infection.

CEREBRAL HEMORRHAGE

Cerebral palsies arising ante partum, intra partum, immediately post partum, or even a few days after delivery, are most often due to cerebral hemorrhage or embolism. Palsies occurring during the second or third week of the puerperium are almost always due primarily to infection; later, and even during the first week, they may be due to infection.

Palsies occurring before or just after birth are often associated with eclampsia or nephritis. Embolism from old or recurrent endocarditis is also a cause. Mitral stenosis, a distinct history of rheumatic fever, chorea and syphilis are suggestive.

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[2] Talley, J. E.: Puerperal Hemiplegia, M. Clin. N. Am. **8**: 899 (Nov.) 1924.

[3] Williams: Text-Book of Obstetrics.

[4] Hunt, J. R.: Bull. Lying-in Hosp. **11**: 73 (May) 1917.

[5] Siemerling, in Doderlein's Handbuch der Geburtshilfe **2**: 467.

[6] Daels, Lequeux and Chomé: Gynec. et obst. **22**: 423.

[7] Karsner and Ghoreyeb: J. Exper. Med. **18**: 507, 1913.

Defective blood vessels, the marked changes of blood pressure and convulsions in eclampsia may lead to cerebral hemorrhage. Necropsies in these cases show punctate or even large hemorrhages. In these eclamptic or albuminuric palsies, hemorrhage is not always found; transient congestion and edema of the brain sometimes give origin to the so-called "serous apoplexies," whose symptoms fluctuate and improve so rapidly as to suggest a hysteria. Occasionally a ruptured varix in the brain has been found post mortem.

Multiple hemorrhages in the basal ganglions, pons and internal capsule are found, thus explaining the crossed palsies—especially the left-sided palsy and aphasia. Marked anemia following postpartum hemorrhage and the sluggish circulation following delivery may be contributing factors in puerperal palsies, but neither alone nor combined are they sufficient as a sole etiologic factor.

PHYSICAL SIGNS AND SYMPTOMS

Pelvic or Femoral Thrombophlebitis.—A gradual, progressive, prolonged increase in pulse rate is present in about half the cases. There may be a slight fever or a subnormal temperature. The former appears the more suggestive. Pain in the groin or leg is usually a late symptom, showing that occlusion is beginning. Thrombosis of the uterine and pelvic veins shows few if any significant signs. Embolism, usually pulmonary, may be the first evidence of its existence. The greater number occur among primiparas, especially those who have had operative help in delivery. This thrombophlebitis in the pelvic region is often the forerunner of intracranial thrombophlebitis and embolism.

Cerebral Thrombophlebitis.—This may be slow in development and show prodromes, headache, paresthesia in the fingers of one hand, one extremity or a side, difficulty in speech, and paresis of the faciohypoglossal region, or in a hand. Sometimes blunted or lost consciousness is first noticed. Frequently the chief symptom, hemiplegia, is an early one. Preceding this there may be convulsions, local or general, depending on the amount of the cerebral surface affected by the extravasated blood.

Aphasia, common with right-sided, may occur with left-sided hemiplegia. Recurring vomiting, fever and increased pulse rate are quite common. The urine may or may not contain albumin and casts. Stupor may alternate with a state in which the patient is noisy, restless and irrational. The spinal fluid may show numerous red blood cells. A terminal coma is common, and those who succumb usually do so during the first week following development of palsy. Some recover entirely, some with a partial palsy.

Palsy due to embolism is apt to develop rapidly. It is likely that small emboli, as clumps of bacteria, are often the point of origin of intracranial thrombophlebitis. Detached fragments from such a thrombophlebitis may give the final blow when the process up to this time has been latent. Frank mitral stenosis and an unsuspected endocarditis have been the source of emboli at necropsy. Occasionally we find recorded pulmonary embolism and cerebral embolism with hemiplegia in the same case. Some of the transitory aphasias and partial hemiplegias and monoplegias are probably due to very small emboli, others to eclampsia. In either case they may simulate hysteria.

Puerperal Cerebral Hemorrhage.—The onset is sudden, headache is common, and fever is rare. Hemiplegia or convulsions may open the scene, the latter when the blood invades the ventricles or spreads over the cerebral surfaces. Crossed palsy is not rare, so palsy of the lower part of the face and aphasia may accompany the hemiplegia, whether right or left. Hemianesthesia is recorded occasionally. The hemorrhages occur more often in the cerebral ganglions; they may be multiple, one larger and others smaller. Especially on the superficial brain surface the hemorrhage is often really an extravasation due to thrombosis. Few cases are studied carefully enough to distinguish the two. Hunt's cases are models in this respect. The occasional varices in the vessels of the great ganglions have been mentioned. Puerperal thrombosis of both choroidal veins is remarked by Adami and Nichols.[8] The serous apoplexies of kidney disease and eclampsia may arise and give the same picture as true hemorrhage.

DIFFERENTIAL DIAGNOSIS

To decide that a centric puerperal palsy is due to cerebral thrombophlebitis, embolism, hemorrhage or serous apoplexy is difficult, if not impossible. In cerebral thrombosis the presence of a known phlebitis elsewhere is suggestive. The palsy is usually less brusque than in hemorrhage or embolism. There may be the antecedent headache, slight fever, accelerated pulse, paresthesia, paresis and aphasia. The hemiplegia is, on the whole, slower of development.

Embolism, like hemorrhage, is brusque. The presence of a phlebitis, known or suspected, or of an endocarditis, especially mitral, is more than suggestive. Cerebral hemorrhage is sudden, the palsy complete early. Diseased vessels, as in syphilis and nephritis, are suggestive. In eclampsia, the presence of nausea, vomiting, visual disturbances, edema and albuminuria are all helpful. The palsy due to cerebral congestion or edema in this connection may be transitory or changeable.

PROGNOSIS

Like the symptoms, the prognosis varies with the underlying cause. The underlying causes differ only that in puerperal hemiplegia we have more often infection at work. That the thrombophlebitis is always mycotic seems most likely, but that there is a variation in the virulence of the bacteria present seems a rational explanation of the various conditions encountered. Puerperal centric palsies are grave, but not hopeless. The number of recoveries slightly exceeded the deaths, and only a few of those patients living had permanent palsies left, and even these show improvement. The permanent disability was never so great as the initial palsy.

TREATMENT

These patients stress anew the need of strict asepsis in delivery, and are an argument against vaginal examinations late in pregnancy. Infections will happen in the hands of the most careful and skilful, especially when obstetric operations are necessary. For the careful obstetrician there is comfort in the observations of Williams. He has seen phlegmasia develop in a woman never vaginally examined, and in whom the first elevation of temperature occurred in the third week post partum. He has seen it develop also in the second half of pregnancy in an apparently healthy woman.

Varicose veins in the legs of pregnant women are common, but these apparently rarely give rise to embolism. However, since Aschoff maintains that disturbed blood flow is an important factor in thrombus formation, early getting out of bed is worthy of consideration.

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[8] Adami and Nichols: Principles of Pathology 2: 563.

The treatment of the local thrombophlebitis is a surgical question. The treatment of the palsies does not differ from the nonpuerperal with the exception that massage and manipulation are contraindicated. Detachment of fragments and a consequent embolism is a real danger.

1811 Spruce Street—1906 Walnut Street.

THE CAUSAL MECHANISM OF DIABETES MELLITUS *

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The presence of an internal secretion in the pancreas and its controlling influence on carbohydrate metabolism have long been surmised. The discovery of insulin fully confirmed this supposition, but the exact mechanism by which diabetes is produced is still problematic. It is now believed that the disease is due to a deficient production of insulin, resulting from a structural or functional change in the islands of Langerhans. In the light of recently acquired knowledge, this explanation seems inadequate. While this disease is undoubtedly due to a lack of insulin, the shortage cannot be ascribed to a simple quantitative reduction in the secretion of this hormone by the pancreas, on either a morphologic or a functional basis.

Gross pathologic affections of the pancreas, in the majority of cases, do not produce diabetes. The degenerative changes in the islands of Langerhans noted in some cases of diabetes are absent in others. The observed changes are by no means uniform, and opinion is divided as to their real significance. The lesion that has been found in the islands of Langerhans is of a degenerative character, and hence, from its very nature, may with equal probability be the result of the disease and not its cause. The question of the relation, or rather lack of relation, of structural changes to the causation of diabetes is best summarized by Allen[1] in the statement: "But it is striking what advanced degeneration of the pancreas can thus be produced, without diabetes, in contrast to the relatively slight changes found in diabetic men and animals in connection with spontaneous diabetes."

When an attempt is made to ascribe the cause of diabetes to a lessened production of insulin on a purely functional basis, the evidence is even more contradictory. Experimentally, it appears that the amount of insulin necessary to control carbohydrate metabolism is relatively small. To produce diabetes in animals, the entire pancreas must be removed, and unless the extirpation is complete, diabetes does not supervene. Thus, mere shreds of pancreatic gland and a little islet tissue can hinder the incidence of the disease. Hédon[2] states that from one-half to 1 unit of insulin per kilogram of body weight is sufficient to maintain a depancreatized dog sugar-free for twenty-four hours. If we interpret this experimental evidence correctly, it must be assumed that every case of diabetes, be it ever so mild, is caused by an extreme reduction of the functional capacity of the pancreas. Moreover, on this basis, the difference between a mild and a severe case in terms of insulin production would be practically nil. In the light of clinical experience, this inevitable deduction seems inadmissible. Thus, the origin of diabetes cannot be explained on either a morphologic or a functional basis. It has also been recently reported that the organs of a diabetic patient, dying in coma, contained insulin in quite large quantities, indicating that death was not due directly to its absence.[3]

Nevertheless, the prompt, symptomatic response that follows the administration of insulin in sufficient amounts to a depancreatized animal or diabetic patient indicates that the disease is due to an insufficiency of active insulin.

The problem of the causation of diabetes resolves itself, therefore, in part at least, into the following propositions: Is the disease due simply to a deficient secretion of insulin, or is it due to a lack of active insulin? This distinction is not academic, and is of the utmost importance in our understanding of the pathogenesis of the disease. The presence of insulin in all the tissues of the body, as well as in the pancreas, even in diabetes, signifies that insulin may be active or inactive; and the deficiency of active insulin in diabetes may be not the result of lessened secretion of insulin, but rather the result of increased or unusual inactivation. The nature and significance of the inactive insulin, present in the different tissues of the body other than the pancreas (normally and in diabetes), forms the subject of a separate study, and will be reported in a future communication. The purpose at present is to call attention to the manner in which insulin can be inactivated in the pancreas, and the relation of this process to the incidence of the disease.

The theory of the inactivation of insulin in the pancreas is based on the simple fact that insulin can combine with trypsin, and, by virtue of this combination, immediately becomes inactive.[4] The process of inactivation appears to be of a chemical nature. It occurs in vitro in the presence of serum and blood, and can also be demonstrated in vivo.

The pancreas contains both trypsin and insulin; the question arises: How can these two substances come in contact, when the one is a constituent of the external secretion and the other a constituent of the internal secretion?

Histologically considered, the pancreas presents two distinct cell groups, namely, the islands of Langerhans and the acini; but there is no barrier between the islands and the acini other than the endothelial walls of blood and lymph capillaries. The unity and close relationship of the vascular supply to both acinous and islet structures of the pancreas is such that changes in the permeability of the capillary walls could conceivably permit the passage of insulin into the areas occupied by the acinous cells, and of trypsin, and other constituents of the external secretion, inward into the blood.

Alteration in the permeability of the walls of capillary vessels is known to occur. Such changes can affect the character and composition of fluids that leave and enter the blood stream. Thus, through a change in the permeability of the capillary walls, *insulin* could enter the acini and become part of the external secretion, and conversely, trypsin, by reflux action, could enter the blood stream and become part of the internal secretion.

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* Read before the Section on Practice of Medicine at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Allen: Glycosuria and Diabetes, Cambridge, Harvard University Press, 1913, p. 462.

[2] Hedon, E.: Compt. rend. Soc. de biol. **90**: 920 (April 11) 1924.

[3] Baker, S. L.; Dickens, F., and Dodds, E. C.: Brit. J. Exper. Path. **5**: 327 (Dec.) 1924.

[4] Epstein, A. A., and Rosenthal, N.: Am. J. Physiol. **70**: 225 (Oct.) 1924.

Paulesco[5] states that all agents or processes which are capable of causing a paralytic dilatation of capillary vessels (epinephrin and piqûre) produce a glycosuria, while those agents which counteract capillary dilatation hinder the production of glycosuria. The perfusion experiments of Clark,[6] of Murlin and his co-workers,[7] and of McCarthy and Olmstead[8] furnish additional evidence in support of the view that altered permeability of capillary walls can permit the passage of trypsin into the blood or perfusion stream, and, by its contact with insulin, render the latter physiologically inert.

In a series of experiments recently reported,[9] my associates and I have adduced evidence which shows the close relationship of the external and internal secretions of the pancreas. From these studies, it appears that trypsin is the chief factor in the external secretion, which bears a direct relation to the causation of diabetes. Its action is twofold: It affects the activity of insulin, and it causes a glycogenolysis in the liver, with a consequent mobilization of sugar.

The following experiments reveal its action: Infusion of trypsin into an artery supplying the pancreas causes a hyperglycemia and glycosuria. In view of the fact that the pancreatic circulation merges with the portal circulation, the effect observed may be due partly to the action of trypsin on the liver, as well as on the islands of Langerhans and the insulin they produce; for infusion of trypsin directly into the portal vein is also followed by a hyperglycemia and glycosuria.

Infusion of saline solution into the pancreatic artery produces a hyperglycemia and glycosuria, while its infusion into the portal vein, in contrast with trypsin, does not. This would seem to indicate that the infusion of saline solution causes a mobilization of trypsin into the pancreatic circulation, brought about by a change in the permeability of the capillary vessels. That this is a justifiable explanation of the phenomenon is supported by the fact that infusion of insulin itself into the pancreatic artery also causes a hyperglycemia and glycosuria.

Further support of the foregoing deductions is gained from experiments in which certain vital stains (of the azin and azonium groups) were infused into the pancreatic artery. These dyes are known to combine with the zymogenic granules of the acinous cells and fix the trypsin in situ without affecting the islands of Langerhans. Infusion of these dyes into the pancreatic artery does not produce any hyperglycemia or glycosuria.

In another series of experiments, mixtures of insulin with these vital stains were used for infusion. Such infusions do not cause any glycosuria; in fact, a hypoglycemia develops. It will be recalled that infusion of insulin alone causes both a hyperglycemia and a glycosuria. This fact can be accounted for only on the basis that the insulin infused is rendered inactive in the course of its passage through the pancreatic circulation, by the trypsin which is mobilized into the blood stream. In contrast to this, introduction of insulin into the portal vein produces its usual physiologic effect; namely, a hypoglycemia.

If we correlate the foregoing facts, we arrive at an explanation for the results obtained. The vital stains used in the infusions combine with the zymogenic granules of the acini and hinder the trypsin from entering the blood stream of the pancreas, thereby preventing, on the one hand, its action on the internal secretion, or insulin, and, on the other, the access of trypsin to the portal circulation, and its effect on the liver.

The normal metabolism of sugar is comprised of two stages, one phase of which is the storage of sugar as glycogen, the other, its disintegration or utilization as a source of energy. In diabetes, one or both of these processes may be affected. The incidence of the disorder affecting the storage may result from the simple passage of trypsin into the pancreatic and portal circulation, conditioned by a change in capillary permeability, while the disturbance in the utilization of sugar may arise from a shortage of active insulin, brought about by the effect of trypsin on insulin.

SUMMARY

The causal mechanism of diabetes is conceived to be as follows: Changes in the permeability of the capillary vessels can result in the passage of trypsin into the blood stream, and its ultimate entry into the liver via the portal circulation. The first effect of the mobilization of trypsin is a glycogenolysis with a consequent hyperglycemia and glycosuria; the second is the neutralization of insulin secreted into the blood stream, thereby causing a deficiency of active insulin.

The theory presented is in closer accord with experimental evidence and clinical phenomena of diabetes mellitus than any heretofore proposed.

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ABSTRACT OF DISCUSSION

Dr. W. S. Collens, New York: We have heard the beautiful theory propounded by Dr. Epstein as to the pathology of diabetes. There has been some experimental confirmation in the work of the Toronto school, insulin having been found in all the tissues of the body in diabetic coma. It would seem that insulin is present but not active. Some recent experimental work has been performed at Cornell Medical School which does not altogether confirm the work of Dr. Epstein. I do not refute his theory in regard to trypsin, but my experiments do not give the same results. In perfusion experiments, in vivo, I made a study of the blood supply of the pancreas and the liver. We injected the arteries of the pancreas. All my experiments were done under an anesthetic that has no effect on the blood sugar level. I have injected the solution into the hepatic artery. Some went to the pancreas; some went to the liver. If I ligated the artery I got the same results as Dr. Epstein. If I injected the solution so that it went only through the pancreas and duodenum, nothing happened. In other words, as a result of perfusion of solution through the pancreas, there is no elevation of blood sugar level or glycosuria. On the other hand, perfusion of the portal vein and hepatic artery caused a rise in blood sugar. Our conclusions were, therefore: First, that saline perfusion of the pancreas does not produce glycosuria, and causes no elevation of the blood sugar level. Second, that perfusion of the pancreohepatic arteries produces glycogenolysis with elevation of the blood sugar level. Perfusion of the pancreatic artery is a very delicate experiment, as the mechanism is very fine. One important conclusion is that these experiments throw some light on the subject of renal diabetes. They show that the reducing substance, or glycosuria, can be produced without elevation of the blood sugar level (that is equal to renal diabetes). Maybe that condition is nothing more than a disturbance of sugar metabolism in the liver.

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[5] Paulesco, N. C.: Compt. rend. Soc. de biol. **90:** 711 (March 21) 1924.

[6] Clark, A. H.: J. Exper. Med. **24:** 621 (Dec.) 1916.

[7] Murlin, J. R.; Clough, H. D., and Stokes, A. M.: Am. J. Physiol. **64:** 330 (April) 1923.

[8] McCarthy, E. R., and Olmstead, H. C.: Am. J. Physiol. **65:** 252 (July) 1923.

[9] Epstein and Rosenthal (Footnote 4). Epstein, A. A.; Rosenthal, N., et al.: Am. J. Physiol. **71:** 316 (Jan.) 1925.

Dr. Elliott P. Joslin, Boston: I think that some insulin is found in the pancreas and in the tissues of the body in the patient dying of diabetic coma. This does not invalidate the idea of the efficiency of insulin or the theory of the relationship of insulin to diabetes. Diabetic coma is an accident that can occur in the mild case from overeating and improperly balanced diet. Insulin may be present in small quantities in the pancreas and yet be inactive. This fits in with what Dr. Epstein has found; that is, that insulin under certain conditions is inactive. This is particularly true in infections. What we should do, therefore, at a necropsy on a person dying of diabetes is to determine the amount of insulin remaining in the pancreas not only when the patient has accidentally died in the early stages of diabetes but also in the later stages. I judge that in the advanced stages one can show a difference in the insulin content of the pancreas from that in an early stage.

Dr. A. J. Carlson, Chicago: A number of years ago, we carried out a certain type of experiment for quite another purpose, which has a direct bearing on Dr. Epstein's theory of the mechanism of diabetes. We did a complete ligation of the pancreatic ducts in animals. This work is not new. Occasionally in one of these experiments there will be a temporary hyperglycemia and glycosuria. We made numerous ligations of the pancreatic ducts in dogs to study the trypsin and lipase content of the blood. We thought the pancreas became edematous with retained pancreatic secretion. The trypsin rose normally in the blood. In diabetes very occasionally there was a hyperglycemia. Under these conditions I think there was the maximal chance for occurrence of a mixture of insulin and trypsin in the pancreas. I should like to make the suggestion of the desirability of testing all postmortem diabetic pancreas material for insulin. Unfortunately, many of these tests are merely an attempt to isolate insulin, and then injection into rabbits to determine whether there is insulin, but not by lowering blood sugar. Many other substances lower blood sugar in the rabbit. If one makes these tests, the injection must be done in the diabetic patient or diabetic dog, because then we can see that it occasionally produces building of glycogen and not merely lowering of the blood sugar. Then we are sure we have insulin.

Dr. Herman Schwartz, New York: Have you been able to keep children to whom you have had to give insulin on the same diet, and stop the insulin? That is, have you been able to raise the tolerance of the patient, after giving insulin for, say, one month of the year?

Dr. Elliott P. Joslin: No, we have not been able to do that.

Dr. A. A. Epstein, New York: The significance of scientific information depends on the source from which it emanates. I will attempt to answer the criticism of Dr. Collens. In Dr. Lusk's laboratory they called my work the "poetry of science." I will now go to the poets' corner. Dr. Collens has found a reducing substance in the urine which he has not identified as sugar. This he has found in traces. My experiments show definitely that sugar is proved to be there in quantitative amounts. Dr. Collens presents a chart which in one instance shows hyperglycemia, and not in other instances, nor any reducing substances. He has superimposed one conception on another by bringing in the explanation of renal diabetes. Work on dogs is different from work on cats. Cats are emotionally more unstable and excitable. Glycosuria is more rapidly produced. The vascular resistance is more comparable to the human being than that of the dog (unless we classify human beings into canine and feline types). But some do not belong; they do not get diabetes. The only way to get into the pancreoduodenal artery is to go to the rear where it lies between the portal vein and the common duct. We must follow the loop surrounding the head of the pancreas, and hook the artery over the index finger. The injection is made directly into the pancreas, compression being made from above. Inversion of the artery causes strangulation of the hepatic branch. Return flow is practically impossible. If that were the case, we should not have had the results obtained with the dyes injected into the pancreoduodenal artery and the portal vein. Dr. Collens did not make control experiments, and he used only saline solution. The work with vital stain is very characteristic. The acinous tissue is practically destroyed after the injection of the vital stain, and there is profuse proliferation of the island tissue. I have not explained what has happened in the experiments of Dr. Carlson, when the duct is tied. I believe the cystic dilation which follows tying of the duct causes compression of the vessels, and there is permeation of trypsin through the lymphatic system. Beadle has produced diabetes by opening up the thoracic duct and draining the lymphatics. There are many problems not yet clear in this question. What I desire to present are a few of the facts warranted by the experiments shown to you and also by means of the definite reaction which takes place between insulin and trypsin in vitro and in the presence of serum and blood; also when insulin is injected into different parts of the body in animals, particularly when trypsin is injected. I do not think we can offer an explanation as regards diabetes. So far as Dr. Joslin's explanation goes, I am in accord with him. I do not want to prove the absence of insulin. The islands regenerate and hypertrophy in diabetes, so there is increased production over the normal; but insulin is rendered inactive, and does not produce its physiologic effects.

CHOLECYSTITIS AND CHOLELITHIASIS IN YOUNG CHILDREN

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The occurrence of gallbladder disease in young children has always been regarded as extremely rare, if not altogether nonexistent. One may search most of the standard works on pediatrics without finding the slightest hint of even the possibility of such a lesion being found in children, and those which do mention it do so only in the most cursory manner. Holt, Kerley and Freer, for example, ignore the subject entirely, and we find Langley Porter, writing in Abt's new work, remarking that "pathological involvement of the gallbladder during childhood is practically unknown, and inflammatory affections of the bile ducts are hardly more common. . . . Gallstone attacks of the adult type do occur in childhood, but so rarely that the records of the cases are medical curiosities." He also notes that Bittner and Lowenberg have reported acute suppurative cholecystitis with perforation and peritonitis in children suffering from typhoid fever. In Fischer's latest edition, five lines are devoted to the subject, beginning with the statement that "authentic cases of gallstones in childhood are rare."

Griffith[1] states that:

> Conditions of this nature are very rare in early life. Congenital obliteration of the bile ducts has already been described. Only exceptionally there exists a congenital absence of the gallbladder. Several such reported cases have been collected by Eshner. Occasionally a roundworm penetrates into the bile duct and sets up an inflammation there. Acute cholangeitis and cholecystitis are very infrequent conditions, but may occur after typhoid fever or from sepsis. Cholecystitis of a more chronic nature is probably not an infrequent sequel of typhoid fever. Tuberculosis of the gallbladder is sometimes seen, and that of the bile ducts is not uncommon, producing small nodules or cavities within the liver. Very exceptionally, gallstones are discovered. Thomson collected

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[1] Griffith: Diseases of Infancy and Childhood, p. 273.

six reports of gallstones in the new-born, and added another. Still found in medical literature twenty cases of gallstones in early life, to which he added three of his own. In all of these the stones were found in the feces, or in the gallbladder at autopsy; ten were in infants stillborn or dying in a few weeks; four in those from 3 to 9 months of age; one in an "infant"; eight in children from 3 to 14 years old. Khautz could collect but fifteen cases from medical literature, six of these being in infants.

The fact that three cases of gallbladder disease in children under 10 years of age have occurred in my own practice led me to investigate the literature, which soon revealed that the ultraconservative attitude of the textbooks is not borne out by the contributions to periodicals. Though reports of this condition in small children are by no means common, abundant evidence is at hand to prove that the lesion is far less rare than the accepted authorities on pediatrics would lead us to suppose.

It was in 1920 that Reid and Montgomery [2] of the Johns Hopkins Hospital collected "eighteen cases of typhoid fever in children under the age of 15 who either died from, or were operated on for, complications arising in the gallbladder." They prefaced their tabulation with the statement that, "in children, acute suppurative cholecystitis of any kind is rare. Altogether there are only about twenty reported cases." Three years before this Eisendrath had reported two cases, both patients being girls of fifteen, in one of whom was found a chronic cholecystitis with calculi, and in the other, "the concomitant presence of an acute cholecystitis with many calculi and . . . an acute exacerbation of a chronic appendicitis." Neither patient had ever had typhoid. In 1909, Wharton [3] reported the case of a boy, aged 13, who developed acute cholecystitis seven days after the removal of a gangrenous appendix. About two years ago, Kellogg [4] of New York removed fifty-two stones with the gallbladder of a girl, aged 11, and in reporting the case appended a tabulation of sixty-two other cases taken from the literature. These include the fifteen cited by von Khautz,[5] in 1913, but do not take into consideration the typhoid cases of Reid and Montgomery.

There are, then, in the neighborhood of eighty reported cases of gallbladder disease in children, from the case of Gibson, made public in 1722, to that of Kellogg, operated on in 1922—a period of exactly 200 years. Though we are certainly justified in calling the condition "rare," it obviously should not be designated as "practically unknown."

Farr [6] summed up the situation very accurately when he said: "Cholecystitis in children is probably not very rare but is usually unrecognized." It is interesting to note that none of the reported cases—so far as I am aware—were reported by a specializing pediatrician, but always by a general surgeon. As Kellogg says, "cholelithiasis of later childhood does not differ from that in adults, but is very often wrongly diagnosed because this lesion is not considered." Even in children suffering from typhoid fever, there seems to have been considerable delay in recognizing the existence of the gallbladder complications. It is in the hope of stimulating interest in the subject that I am reporting the three following cases:

REPORT OF CASES

Case 1.—A well nourished boy, aged 4 years, had had severe abdominal pain, nausea and vomiting for two days before examination. There had been no previous illness except measles, at the age of 2, during which the skin and whites of the eyes were reported to have been "yellow." The abdomen was rigid and very tender, and the pain was localized in the appendical region, the rigidity being greatest at the right side. The child vomited during the examination. The temperature was 100.4 F.; and the pulse rate, 110. The blood count showed: leukocytes, 15,000; polymorphonuclears, 85 per cent. The urinalysis was negative. Under a diagnosis of acute appendicitis, laparotomy, performed the same day, showed the appendix bound down by a few adhesions, but not sufficiently diseased to account for the symptoms. Exploration of the gallbladder revealed a greatly enlarged organ under considerable pressure, containing a solitary stone the size of a marble. The removal of the stone liberated a quantity of thick dark bile and pus, which on culture proved to contain streptococci, staphylococci and colon bacilli. Drainage of the infected gallbladder was followed by uneventful recovery.

Case 2.—A poorly nourished boy, aged 5½ years, gave a long history of ill health, for in addition to "digestive upsets" all his life, he had suffered measles, whooping cough and scarlet fever, and had had both femurs fractured in an automobile accident, the reduction of these fractures requiring several operations under anesthesia. All the operative wounds had healed by first intention, however, and the plates used had been removed. One month following the last operation on his legs, there had been a very severe attack of abdominal pain, with nausea and vomiting. The temperature was 102 F.; pulse rate, 110, and urinalysis negative except for a suspicion of bile. The blood count was: leukocytes, 13,000; polymorphonuclears, 78 per cent. The right side of the abdomen was rigid, and palpation over the appendix was very painful. The original diagnosis of acute appendicitis having been concurred in by two consultants, incision revealed an acutely inflamed appendix, which was extirpated. As palpation showed the gallbladder to be much enlarged, the incision was lengthened to permit its exploration. The gallbladder could not be emptied, and seemed to be under considerable pressure. On aspiration, pus and thick bile were obtained, which gave cultures of mixed infection. Cholecystotomy with drainage was followed by uneventful recovery.

Case 3.—A boy, aged 9½ years, who was fairly well nourished and had had but one previous illness, scarlet fever at the age of 5, presented symptoms that duplicated those of the two preceding cases; there was a trace of albumin in the urine; the leukocyte count was 13,000, and the polymorphonuclears, 75 per cent. Acute appendicitis was diagnosed, but the parents refused operation for two days, during which time all the symptoms were greatly exacerbated, the white blood cell count increasing to 16,000, and the polymorphonuclears to 80 per cent. When consent was finally gained, incision showed the appendix to be only moderately inflamed; but when it had been removed, examination of the gallbladder revealed conditions similar to those found in Case 2, a mixed infection being demonstrated by culture. After the gallbladder had been opened and drained, the child made a good recovery.

COMMENT

A comparison of these cases with some of those more recently reported in the literature accentuates several points of interest. Farr, who reported five cases, believes that a bacteremia is, in some cases at least, an etiologic factor, and he also notes that appendicitis "is a frequent concomitant, if not an etiological factor." In four of these five patients, the appendix was found to be in a pathologic condition. In the cases of Eisendrath [7] and Wharton, appendicitis has already been mentioned as having immediately preceded the attack of gallbladder disease, and in two earlier cases listed in Kellogg's table—those of Royer, 1864, and Mercat, 1884—there was acute inflammation of the appendix. In Kellogg's own case the appendix "was thickened and adherent, . . . evidently the seat of chronic inflammation." In my second and third cases, the condition in the appendix was evidently related to that found in the gallbladder. In the first case, the connection was not so evident.

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[2] Reid, M. H., and Montgomery, J. C.: Acute Cholecystitis in Children as a Complication of Typhoid Fever, Bull. Johns Hopkins Hosp. **31**: 7 (Jan.) 1920.

[3] Wharton, H. R.: A Case of Acute Cholecystitis Following Acute Appendicitis, Tr. Am. Surg. A. **27**: 540, 1909.

[4] Kellogg, E. L.: Gallbladder Disease in Childhood, Ann. Surg. **77**: 587 (May) 1923.

[5] Von Khautz, A.: Cholelithiasis und Cholecystitis im Kindesalter und ihre Behandlung, Centralbl. f. d. Grenzgeb. d. Med. u. Chir. **16**: 545, 1913.

[6] Farr, C. E.: Cholecystitis and Cholelithiasis in Children, Arch. Pediat. **39**: 574 (Sept.) 1922.

[7] Eisendrath, D. N.: Gallstones in Infancy and Childhood, Ann. Surg. **66**: 557 (Nov.) 1917.

In two of my cases there was a history of previous scarlet fever. A similar history is mentioned in but one of the cases from the literature, Farr's third case. This patient, who was a boy, aged 8, had also had "rheumatism," "kidney trouble" and "heart trouble," all rather vague terms suggesting systemic infection. It is probable, however, that a history of scarlet fever may have been omitted from some of the cases in which it really occurred. Many of the reports are fragmentary, and cultures were made only in the more recent examination.

In regard to sex, Farr's series, like my own, was made up exclusively of males. In Kellogg's statistical summary, in which Farr's cases are included, the sex incidence is given as males, twenty-five; females, eighteen; sex not stated, twenty-one. In Reid and Montgomery's series of typhoid cases, eighteen in all: males, four; females, six; sex not stated, eight. It would seem, therefore, as if the disease was a trifle more common among boys than girls, which reverses the sex incidence in adult cases of gallbladder disease, in which females are in marked preponderance.

The symptoms displayed by all my patients are apparently very typical; the same story is repeated in nearly every report. Even when the appendix turns out to be normal, or practically so, we perceive that the classical syndrome of acute appendical inflammation is so consistently in evidence that errors in diagnosis are very likely to occur. When the patient is, or has been, suffering from typhoid fever, even when he is a child, the well known connection between the typhoid bacillus and the formation of stone in the gallbladder is likely to suggest the true nature of the lesion, though the actual occurrence of gallbladder complications in typhoid patients of any age is a very rare thing. Reid and Montgomery quote Holscher, "who made postmortem examinations in 2,000 cases of typhoid fever. Of these, five showed gross pathological changes in the gallbladder, but in only one was there a perforation. More recently, A. W. Webb-Johnson, in his careful study of 2,500 cases of the typhoid fevers observed during the first half of the war, reports only one case of acute cholecystitis in which surgical measures were resorted to, although in fifteen cases the symptoms and signs of acute cholecystitis were sufficiently definite to be recognized."

The diagnosis should not be difficult, especially in older children, if the possibility of cholelithiasis occurring in a child is kept in mind. The presence of stones is mentioned in forty-four of the cases collected by Kellogg, their absence in ten cases, while in ten, nothing is said about it. In Reid and Montgomery's series, stone was found in but a single case, and here the gallbladder affection was not manifested until eight months after the recovery from typhoid fever. My own ratio of one in three would therefore seem to be not far from the average among patients who have no typhoid history.

In closing, I would again emphasize the desirability of more systematic observation and publication of cases of gallbladder affections in the early years of life, as it is only by the accumulation of data that we can hope to see this surgically important condition promptly recognized and adequately treated.

44 South Marengo Avenue.

OUTLYING ACIDOSIS *

PEYTON ROUS, M.D.
AND
D. R. DRURY, M.D.
NEW YORK

Not long ago it was thought that living mammalian cells would die if the fluid bathing them became acid. Now the fact is accepted that cells of some sorts, at least, can survive and proliferate in an acid medium,[1] while, furthermore, there is evidence that the reaction prevailing normally within certain organs of high metabolic activity is frankly acid.[2] In the present paper we shall discuss certain conditions in which there develops a noteworthy and often widespread acidity in the subcutaneous tissue—which ordinarily is faintly alkaline to phenolsulphonephthalein [2]—without any change occurring in the blood reaction. The acidity is a frequent consequence of functional readjustments within the organism; and it leaves no sign of injury, at least when it is temporary.

The shaved body surface of a living rat stained with phenol red (phenolsulphonephthalein) [3] is rendered brilliant pink by the dye, the hue corresponding to that associated with a p_H slightly less than 7.4. If now a minute fraction of a drop of 1:1,000 epinephrin solution, previously brought to this p_H, is injected beneath the skin, no immediate change in color follows, but after about five minutes there appears at the injection site a gradually spreading alteration from pink to yellow, and within half an hour there is ordinarily a yellow patch several centimeters broad, which lessens in size later and disappears, by a peripheral reversion to the pink of its surroundings. If the rat is in process of decolorization when the injection is given, the normal hue will be restored everywhere except in the patch of yellow; and as the latter begins to grow smaller, a rosy border appears about it. As the patch dwindles, so does the border follow it in, coming together as a rosy spot just before all extraneous coloration is lost. It cannot be due merely to hyperemia as such, for it fails to disappear on pressure, though reverting to yellow if the pressure is prolonged. It is due to phenol red that has been changed to the pink, alkaline form as circulation is resumed at the periphery of the region affected.

The explanation for all of the foregoing findings lies, of course, in the ischemia caused by the epinephrin. A local blanching can be noted within fifteen seconds after the injection has been made into an unstained rat or one lightly stained; and the blanched patch spreads, to shrink again after a time, like the yellow patch of stained animals. If phenol red is administered, the rat rapidly becomes pink except for the blanched area, and the hue that this takes on, when it does at length begin

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* From the Laboratories of the Rockefeller Institute for Medical Research.

[1] Rous, Peyton: J. Exper. Med. **18**: 183, 1913. Lewis, M. R., and Felton, L. D.: Bull. Johns Hopkins Hosp. **33**: 112 (March) 1922. Fischer, Albert: J. Exper. Med. **34**: 447 (Nov.) 1921.

[2] Rous, Peyton: Science **60**: 1555, 1924; J. Exper. Med. **41**: 451, 739, 1925.

[3] Brilliant staining can be effected by the intraperitoneal injection of a 4 per cent. solution of phenol red, brought to p_H 7.4 with sodium hydroxid, and made isotonic with sodium chlorid. For a rat of 150 gm., about 1.8 c.c. is required.

to color, is not the pink of the surrounding tissue, but the yellow of acidity. Later it turns pink.

The acidity developing in the ischemic tissue is doubtless referable in the main to accumulated carbon dioxid; for when the yellow patch resulting from an epinephrin injection is exposed to the air by eversion of a flap of skin,[2] it it rapidly becomes deep pink, a change that is especially impressive when the surrounding tissue has already decolorized. The acidity is greater than can be measured in terms of phenol red, but not much greater, as is shown by tests on rats stained with bromcresol purple or chlorphenol red. The maximum color alteration observed after epinephrin is such as would be indicative, under control conditions, of a fall from approximately p_H 7.3 to about p_H 6.4.

We have ventured to give the name "outlying acidosis" to the condition illustrated by the foregoing simple example, meaning thereby a tissue acidosis independent of the reaction of the blood, because lying beyond the influence of this fluid. That an extensive acidosis of the sort may arise under circumstances frequently met in human beings will now be shown.

When an animal stained with phenol red is submitted to a severe but nonlethal bleeding, there results at first no change in the color of the body surfaces, or they show at most a slightly yellowish cast in the prevailing pink. But soon yellow patches begin to appear here and there, and within a few minutes they may be so numerous as to be almost confluent. They are irregularly rounded, with ill defined borders, and of various sizes up to a centimeter in diameter. If the loss of blood is too great to be sustained, a general yellowing of the body surfaces occurs shortly before death, in which the yellow patching is lost; whereas if the animal adjusts itself well after the hemorrhage, the patches soon merge with the pink of their surroundings. Even when they are well marked, gentle friction over them quickly restores them to pink, but only temporarily unless there is a change in the general condition.

Here again one meets the phenomenon of a localized tissue acidosis, not inconsiderable in degree; and again it would seem due, in great part at least, to a local ischemia, consequent on a reduction in blood volume. That in other part it may be due to lessened oxidation consequent on the diminution in number of the red cells goes without saying; though the fact that the patches tend to disappear as the blood is diluted back to the original volume speaks against the importance of this factor. By the repeated aspiration under oil of 0.2 c.c. of blood from the carotid of the urethanized rat it has been possible to determine the p_H[4] and the percentage of red cells[5] before and after the hemorrhage. The blood reaction is not altered from the previous normal, even when the body surface shows many yellow patches; and the drop in the cell percentage is slight in such instances—as compared with others in which no patches appear—showing that the loss in blood bulk is but ill repaired. The patches quickly ventilate to purple when a skin flap containing them is exposed to the air.

When stained rats are given a hypertonic solution of sodium carbonate by mouth, an outlying acidosis develops at the same time that the blood becomes more alkaline. If the dose is properly gaged the animals turn yellow, at first only in patches, but everywhere shortly before death. Blood specimens taken when the hue is outspoken have a p_H greater than that found at the beginning of the experiment. Everted skin flaps rapidly ventilate to pink.

It is difficult to understand how the paradoxical acidosis here encountered could exist unless the blood supply to the parts showing it were interfered with. That this is the case can be proved by injecting into rats colored with phenol red, receiving carbonate, and bearing the yellow patches, another stain which, under ordinary circumstances, would color the tissues deeply and rapidly. We have employed bromphenol blue which has an indicator range too far to the acid side for the reaction of the tissues to alter the hue. Through a superimposed staining with it, those portions of the body surface already pink with phenol red are turned to a deep plum color, whereas the yellow patches are not altered in the least, but only rendered more prominent by reason of the dark background. Into them, evidently, the influence of the blood carrying the stain does not reach. If no phenol red has been given beforehand, but only carbonate, the rat becomes blue, mottled with patches in which there is no color, in contrast to the controls which stain diffusely.

The outlying acidosis consequent on carbonate administration is encountered only when anhydremia develops, as the hematocrit readings prove. Under such circumstances, with the blood bulk rapidly decreasing, much the same vascular shutdown is known to take place as after a bleeding. Our experiments have shown that a variety of substances and conditions giving rise to anhydremia will cause outlying acidosis; for example, hypertonic dextrose solution by mouth, or purgation with sodium sulphate. The acidoses thus induced are not uninfluenced by the means taken to produce the anhydremia. Stained rats given dextrose solution become intensely yellow before death, a hue attained by controls only several hours post mortem; there is a tendency for the blood p_H to fall; and skin flaps exposed to the air while the animal is yet alive show scarcely any change toward pink, an observation which would suggest that the local acidity is due in the main to acids that are not volatile.

An extension of the observations, with a detailed correlation between the blood and tissue changes, is evidently desirable, for the conditions in which outlying acidosis may be expected are numerous. One cannot doubt its frequency in man under circumstances involving a local circulatory perversion; and it doubtless affects other tissues besides the subcutaneous. The literature supplies not a few indications that a widespread acidosis of the sort must exist in patients with shock or acute anhydremia, or with peripheral circulatory impairment from other causes. The blood in such cases often shows a frank or a compensated acidosis,[6] and the urine acid products in abnormal quantity. The impression seems to be a general one, however, that threatened changes in the reaction of the tissues are regularly averted through compensatory adjustments within the blood, until, indeed, the products responsible for the trouble are formed in such quantity that all regulatory safeguards are overborne. Our experiments prove that this course of events is far from being regularly followed. An extensive tissue acidosis involving a marked fall in p_H can coexist in the same organism with a blood that is more alkaline in reaction than the normal or with one of unchanged p_H. That the blood p_H must frequently fail to change because the acidosis is "compensated" in this fluid does not lessen the significance of the fact that the acidosis in the tissues is uncompensated.

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[4] Method of Hawkins, J. A.: J. Biol. Chem. **61**: 147 (Aug.) 1924.

[5] Method of Van Allen, C. M.: J. A. M. A. **84**: 202 (Jan 17) 1925.

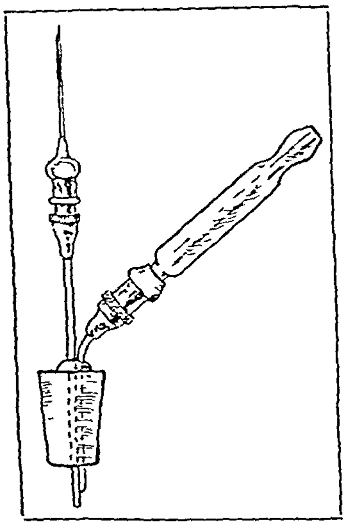
[6] Cannon, W. B.: Traumatic Shock, New York, D. Appleton & Co., 1923. Marriott, W. M.: Physiol. Rev. **3**: 275 (April) 1923. Wright, A. E., and Colebrook, L.: Lancet **1**: 763 (June 1) 1918. Wallace, G. B., and Pellini, E. J.: Capillary Poisons and Acidosis, Arch. Int. Med. **28**: 711 (Dec.) 1921.

The possibility suggests itself that tests can be made for outlying acidosis by local injections of an unbuffered solution of indicator. Our tentative efforts in this direction show phenol red to be unsuited to the purpose, owing to the circumstance that the yellow of the acid form is difficult to discriminate through the skin except when a great deal of the dye is present in the tissues. For test purposes, an indicator will be needed that becomes deeply colored under conditions of acidity.

Clinical Notes, Suggestions, and New Instruments

A MODIFICATION OF THE McRAE NEEDLE

J. E. Lane, M.D., New Haven, Conn.



Modification of McRae needle.

The McRae blood-taking needle is a very useful article. It is hard to clean, however, and rusts easily. In an attempt to overcome these slight disadvantages, I devised a modification of it in the form of the adapter here illustrated.[1]

The adapter is made of a nonrusting material, and its caliber is so large that it is easily cleaned. Any Luer needle of the desired size may be used on it, and the suction end takes a Luer observation tube or rubber tubing without the interposition of the observation tube.

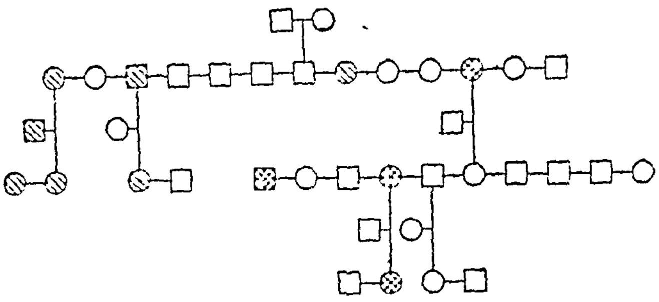
THE HEREDITARY TENDENCY TO HERPES FACIALIS AND URTICARIA

James B McNair, A M, Chicago

White considers the predisposition to urticaria hereditary. But in the study of herpes, no one besides observing a marked predisposition in certain persons seems to have mentioned a possible hereditary tendency. The accompanying illustration shows the *occurrence of herpes facialis and urticaria among four generations of one family.* Squares represent males, circles represent females; those shaded with parallel lines represent individuals having herpes, and those shaded with cross-lines represent individuals who have both herpes and urticaria.

If the tendencies to herpes and urticaria in this family are inherited, they have indications of being mendelian recessive characters. The great-grandparents may have been heterozygous in this regard; for although they did not have either herpes or urticaria, they may have been able to transmit the tendency to their offspring, as four of their thirteen children had herpes. The diagram also shows, in accordance with the mendelian theory, that if one parent is recessive and the other heterozygous, some of the children may have the tendency. Similarly, if both parents are recessive, all the children may have the tendency. One marriage of what may be an instance of a heterozygous and dominant mating *results in* all the children being without the tendency. The tendency to herpes does not seem to be sex linked, as either sex may transmit it.

This family does not represent all the six mendelian matings possible, but as far as represented the tendency to herpes is in accordance with the mendelian theory. However, analogy is no proof, and the tendency may not be hereditary. It is my hope that this presentation may stimulate investigations toward further work in this line and toward the cause, cure and prevention of both herpes and urticaria.



Occurrence of herpes facialis and urticaria among four generations of one family: Squares, males; circles, females; parallel shading, herpes; cross-shading, herpes and urticaria.

Box 58, University of Chicago.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN

(See The Journal, May 2, 1925, p. 1338).

H. K. Mulford Company, Philadelphia.

Scarlatinal Antitoxin (Unconcentrated)-Mulford.—It is prepared from the serum of horses treated with subcutaneous injections of toxic filtrate from cultures of scarlet fever streptococci, and also with intravenous injections of the streptococci themselves. It is claimed to contain both antitoxic and bacterial antibodies. Each cubic centimeter neutralizes at least 10,000 skin test doses of scarlet fever toxin.

Marketed in packages of one syringe containing 10 Cc. (prophylactic dose) and in packages of one vial containing 40 Cc. (therapeutic dose).

Scarlet Fever Streptococcus Antitoxin Lederle (Unconcentrated).—It is prepared by immunizing horses by the subcutaneous injection of the toxic filtrate obtained by growing the scarlet fever streptococcus in broth; also by injecting cultures of the scarlet fever streptococcus. Each cubic centimeter neutralizes at least 10,000 skin test doses of scarlet fever toxin. Marketed in packages of one syringe containing 10 Cc., and in packages of one cylinder containing 50 Cc. with an intravenous injection outfit.

INSULIN-STEARNS (See New and Nonofficial Remedies, 1925, p. 174).

The following dosage forms have been accepted:

Insulin Stearns 80 Units, 5 Cc.: Each cubic centimeter contains 80 units

Insulin-Stearns 80 Units, 10 Cc.: Each cubic centimeter contains 80 units

PROTEIN EXTRACTS DIAGNOSTIC-P. D. & CO. (See New and Nonofficial Remedies, 1925, p. 289).

The following product has been accepted:

Tuna Fish Protein Extract Diagnostic-P. D. & Co.

Prepared by the method given in New and Nonofficial Remedies, 1925, p 289.

Education of Public in Health Matters.—The public conscience is now awake, as it never has been before, to its duty toward the individual, and part of the awakening consists in realization of the value of *modern discovery in its* applications to bodily and mental health. Moreover, all that is being done is affected by the better general education of the community at large, by the higher standard of life in respect of food and cleanliness.—McVail, J. C.: *Proc. Roy. Soc. Med.* **18**:61 (Dec.) 1924.

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[1] Made by Becton, Dickinson & Company.

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SATURDAY, JULY 4, 1925

THE REGENERATION OF BLOOD IN ANEMIA

In their discussions of the treatment of the secondary anemias, the current textbooks on therapy are singularly reticent or noncommittal about procedures intended to cause a restitution of the lost blood. A generation or more ago, one would have found "hematinics" discussed in considerable detail, special attention being devoted to the pharmaceutic niceties of a large variety of preparations of iron. "Iron," Sir Lauder Brunton told his students, "forms an important constituent of the red corpuscles, and in all cases of anemia iron is employed. It is sure to be tried, whether it does good or not." A decade later, Cabot was somewhat more cautious; for he was "not convinced that iron and arsenic hasten the processes of regeneration, but if the stomach is in good condition there is no objection to their use." Today the greatest stress is placed on "nutritious alimentation," a suggestion almost as vague in its specific application as are the dicta of drug therapy.

It is important to realize that the regeneration of blood may be something more than the restitution of iron to the blood. The quantity of this element actually needed may be comparatively small. Hemoglobin itself is a highly complex and chemically peculiar compound. Its organic precursors are by no means known at present. It is not improbable that the provision of these specifically is as imperative as is the supply of iron in any particular form. Furthermore, the proper functioning of the hematopoietic apparatus, whatever it may be, deserves consideration as well as do the materials with which it may act.

The significance of diet has been brought into added prominence through the studies of Whipple and his collaborators in recent years. They have brought convincing evidence that in simple anemias the amount of hemoglobin regenerated in the body can be modified at will by the character of the food administered. Thus, under carefully controlled conditions, certain dietary regimens may preserve experimental animals in seemingly excellent physical condition in respect to weight, appearance and activity without any amelioration of an existing anemia, whereas the inclusion of meat or liver may produce immediate regenerative responses not imitated by equivalent doses of iron or preformed blood pigment. More recently, Whipple and Robbins[1] have repeated their experiments under conditions of more severe and prolonged induced anemia. Here, again, liver feeding has remained the most potent factor studied for the sustained production of hemoglobin and red cells, as indicated in various tables. This favorable and remarkable reaction is invariable, no matter how long continued the anemia level, no matter how unfavorable the preceding diet periods may be, and regardless of the substances given with the liver feeding. Muscle feeding in dogs with severe anemia gives a favorable reaction in many cases and only a moderate reaction in others. Again, the heart muscle seems to be somewhat more potent in hemoglobin and red cell production as compared with skeletal muscle. Whipple and Robbins consequently gain the impression that the body stores in the liver parent substances, which are used in the construction of hemoglobin and red cells. This confirms their belief, gained from work with dogs having bile fistula, that the liver is concerned fundamentally not only with metabolism of bile pigments and their parent substances but also with the production and storage of some parent substances used in the manufacture of finished hemoglobin and red cells. One need not be surprised, they add, to find that parent pigment substances are stored in striated muscle. This storage might be concerned with the emergency needs of these muscles to maintain their content of muscle hemoglobin.

In one respect, the earlier report of Whipple and his collaborators demands correction. During brief periods of anemia, conventional treatment with iron seemed to be without effect. They now find, however, that long continued severe anemia due to hemorrhage may be associated with iron depletion, and these experiments in dogs show a favorable reaction to treatment with iron. The same is probably true for human beings. The reaction to iron may vary, yet the favorable reaction to liver feeding is a sustained and uniform maximum.

One of the reasons commonly advanced in commendation of the use of green vegetables in the diet has been their content of iron and their supposed blood-building potencies. The latest studies indicate, however, that the green vegetables are only moderately favorable food factors for the regeneration of hemoglobin and red cells. Robbins and Whipple point out that chlorophyl may be like hemoglobin in its chemical structure, but the normal dog cannot utilize much, if any, of the chlorophyl nucleus for hemoglobin construction, even under maximal stress. These recent laborious experiments do not necessarily furnish the last word in respect to the dietary that produces the preferred nutritive conditions in the relief of anemia; but we can only agree with the Rochester investigators that food factors deserve serious study under controlled conditions by physicians who would understand the complex anemias associated with human disease.

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[1] Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia, I, Standard Basal Ration Bread and Experimental Methods, Am. J. Physiol. **72**: 395 (May) 1925. Robscheit-Robbins, F. S., and Whipple, G. H.: Blood Regeneration in Severe Anemia, II, Favorable Influence of Liver, Heart and Skeletal Muscle in Diet, ibid., p. 408. Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia, III, Iron Reaction Favorable—Arsenic and Germanium Dioxide Almost Inert, ibid., p. 419. Robscheit-Robbins, F. S., and Whipple, G. H.: Blood Regeneration in Severe Anemia, IV, Green Vegetable Feeding, ibid., p. 431.

OXYGEN THERAPY IN PNEUMONIA

Two hundred and fifty years ago, John Mayow first showed that something necessary for life is taken from the air. It was a forecast of the oxygen requirement of the body, although to this older English physiologist the requisite air-borne substance was "spiritus nitroaereus." Lavoisier was the first, however, to understand the significance of oxygen from a truly chemical standpoint. Before the end of the eighteenth century, he realized that the respiratory exchange is the result of a process of combustion going on in the body, by which the carbon and hydrogen of the animal tissues are united with oxygen to form carbon dioxid and water. Through this conception of "vital oxidations," the importance of oxygen was given decided emphasis. A further great step in advance came with the demonstration that oxygen is not held in the blood merely dissolved in the plasma as nitrogen is, but becomes transported for the most part in combination with hemoglobin. The blood pigment thus is indeed a respiratory pigment or oxygen carrier.

In view of these facts, it is not surprising that oxygen should early have been hailed as a panacea. It was, to quote a recent writer,[1] a romantic idea to have separated from the air its life-sustaining principle, and accordingly oxygen inhalations were used for almost every conceivable malady, from hysteria to bubonic plague, and in almost every conceivable form—even in the form of oxygenated bread, which became a therapeutic fad. But the oxygen bubble burst.

There are several reasons why some of the earlier hopes were not realized and why some of the supporting theories were unwarranted. One was supplied with the demonstration that oxidation does not occur primarily in the blood stream but rather in the tissue cells. Oxygen inhalation could not be demonstrated to increase tissue oxidations, as might be expected from the ill founded analogy of fanning a flame. Furthermore, although the tissues are continually using oxygen and thus creating a sort of vacuum for it within the metabolically active cells, there seems as a rule to be a reasonable surplus available in the blood stream. The arterial blood carries nearly its maximum load of oxygen under ordinary circumstances; and the venous blood returning from the oxygen-hungry tissues rarely represents a depletion to less than three fourths of the initial oxygen content. Under such circumstances it is not easy to bolster up an argument for "suboxidation," and consequently special oxygen administration seems rarely to be called for.

Nevertheless, there are undeniably conditions in which oxygen want does occur. It arises at altitudes at which the partial pressure of the gas in the atmosphere is reduced and the arterial blood no longer carries its usual complement. The studies of man in mountain climbing, ballooning and aviation have brought accurate evidence that, with a fall in the tension of oxygen in the alveolar air, anoxemia may become a serious reality. The essential cause of altitude sickness is lack of oxygen. It was Paul Bert, in 1878, who first furnished clear experimental proof that the abnormal symptoms and dangers depend on the imperfect aeration of the arterial blood with oxygen. Today this is no longer debated.

There are conditions other than low barometric pressure that may produce anoxemia. It may occur after hemorrhage and in anemia; it may follow the restriction of a free influx of air into the lungs; and it is a demonstrable symptom of many cases of lobar pneumonia. Stadie has observed, in a series of thirty-three pneumonia patients, that not one recovered whose arterial saturation was below 70 per cent. As Binger has pointed out, if we consider that the patient with pneumonia has to fight a severe, progressing infection with its associated toxemia, it is perfectly clear that the added disadvantage of anoxemia may be such as to overcome him. And it becomes perfectly apparent that it is to his advantage to save him from the extra burden on his cardiorespiratory and central nervous systems which anoxemia involves. Accordingly, Binger [1] has advised a return to the principle of early, continuous oxygen therapy in such patients. He does not deny the abject failures that the hurriedly summoned oxygen cylinder of two decades ago will recall to many physicians. "We might as well administer tincture of digitalis by spraying the drug in an atomizer," Binger pointedly comments, "as giving oxygen by holding a funnel several inches away from a patient's nose and mouth. To administer oxygen effectively, we must raise the partial pressure of the gas in the patient's alveolar air, and this should be done, as far as is practicable, quantitatively as with any other drug." The "ideal" procedure is the use of a suitable oxygen chamber in which the artificial atmospheric conditions can be accurately controlled. Few localities offer such facilities, but lately various tentlike devices have been described that fit over the bed and in which the atmosphere can be raised to a desired level of oxygen. Blood analysis will give evidence of the efficacy of any scheme of administration. Binger's experience with the chamber at the Hospital of the Rockefeller

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[1] Binger, C. A. L.: Oxygen Therapy in Pneumonia, Bull. New York Acad. Med. 1: 17, 1925.

Institute, New York, shows that 40 per cent. oxygen, or approximately twice the normal atmospheric concentration, is sufficient to raise the blood to as near normal as it can be. If 40 per cent. does not do this, it is unlikely that a higher percentage will. At any rate, oxygen therapy deserves renewed consideration when an adequate rationale for its application can be developed.

FOOD POISONING IN GREAT BRITAIN

The growing interest taken by public officials and others in so-called food poisoning has been stimulated by two recent publications of the British Medical Research Council.[1] Injurious effects attributable to food may be due to diverse factors, in themselves of varying degrees of interest and sanitary importance.[2] At the same time, certain familiar groups of symptoms are by common consent regarded as "due to food poisoning." This is especially true of those outbreaks in which the paratyphoid or salmonella bacilli are concerned, doubtless because in this form of disease the gastro-intestinal symptoms are acute and because the illness can often be readily traced to some particular article of food taken. It is this group of bacilli that is dealt with in the first of the reports cited. Perhaps the point of most general interest in a paper mainly technical is the thesis that heat-resistant toxins produced by paratyphoid bacilli are sometimes the cause of poisoning through the use of heat-preserved food which long before had been contaminated by these organisms. It must be admitted that the epidemiologic evidence for this conclusion is quite unconvincing, and that the animal experiments advanced in support of the main assumption are singularly uncontrolled. Much more work and more careful work will be necessary before this somewhat unusual contention of the English authors is justified.

Nature of Outbreaks of Food Poisoning

	Number of Outbreaks
Probably not true food poisoning	3
Due to members of the salmonella group	66
Due to members of the dysentery group	4
Due to members of the B. botulinus group	1
Definite chemical origin	2
Cheese-poisoning outbreaks	8
Mild evanescent outbreaks	9
Undetected bacterial origin	7
	100

In the second paper is given a record of 100 consecutive outbreaks of food poisoning in Great Britain, "taken without selection, just as they were reported to the authors and investigated at the time." The accompanying table summarizes the results.

The high proportion of food poisoning cases attributed to the group of salmonella or paratyphoid bacteria will be of especial interest to epidemiologists in this country. The figures are quite different from those obtained by Geiger[3] in his analysis of 749 reported outbreaks of food poisoning in the United States. Indeed, it will surprise most American students of food problems to be informed that so large a proportion of reported "food poisoning" outbreaks can be traced to their source—by even the most experienced investigators.

The impression of hasty judgment on the part of the English workers is deepened by an examination of what the authors regard as the "essential particulars" of the hundred outbreaks. Case 2 was said to be a small outbreak involving two families and was attributed to canned beef. "The rest of the beef was not specially followed up, so probably there were other cases." Case 3: "The only sufferer was a man who ate two cans of sardines." Case 4: "The evidence incriminating the salmon is not conclusive, while one person who ate some of it escaped." This outbreak, however, is tabulated as one in which "the vehicle of infection" was salmon. Case 96 also is included among the salmon outbreaks, although among the "essential particulars" it is stated that "while the salmon was probably the cause of the illness, no definite proof is available." In a number of instances it is alleged that a living paratyphoid bacillus was isolated from the canned food. Meat, salmon, fruit and tomatoes are listed as the "peccant foods." In the discussion of an outbreak at Birmingham attributed to "a tin of Canadian tomatoes," the authors go so far as to assert, "There is no doubt from the facts that this organism [i. e., a living paratyphoid strain] was present in the can before opening and had survived any 'processing' given to the tin." Most bacteriologists will question the likelihood that the nonsporing paratyphoid bacilli can survive the ordinary canning temperatures even if it is assumed that the tomatoes and salmon were imperfectly processed. In another instance, fresh tomatoes are considered the vehicle of paratyphoid infection, although "the evidence is not perfectly conclusive." Canned apricots (Case 40) are also considered the vehicle of infection with a paratyphoid bacillus (*B. aertrycke*) on astonishingly slender evidence.

Altogether, it cannot be said that an uncritical compilation of "100 outbreaks" adds materially to our knowledge of the obscure and difficult problems of food poisoning. It is truly remarkable that detailed tabulations should be made and conclusions drawn on the basis of such evidence as is presented in the appendix of the British report. Further investigation of alleged instances of food poisoning is just as necessary, just as difficult and somewhat more involved than it was before the work of the English writers.

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[1] Savage, W. G., and White, P. B.: An Investigation of the Salmonella Group, with Special Reference to Food Poisoning; Food Poisoning: A Study of One Hundred Recent Outbreaks, Medical Research Council, London, 1925, Special Reports 91 and 92.

[2] Jordan, E. O.: *Food Poisoning*, Chicago, 1917, p. 112.

[3] Geiger, J. C.: Poisoning by Food Probably Due to Contamination with Certain Bacteria, J. A. M. A. **81**: 1275 (Oct. 13) 1923.

Current Comment

MEDICAL TESTIMONIALS

The layman is not the only offender in giving testimonials for nostrums; some physicians are just as bad. A government official whose work is devoted largely to investigating frauds in foods and drugs recently wrote to THE JOURNAL regarding the difficulties the government had over testimonials given by unthinking or venal physicians. He said in part:

> You probably realize that one of the greatest handicaps in controlling or eradicating false advertising in connection with medicinal products are testimonials of physicians. One meets them at every hand. Particularly abundant are they in connection with the mineral waters, radium products, vitamins and gland therapy. I am enclosing herewith copy of what might be considered a multiple testimonial by a number of medical men located in ———. You may be interested to learn that we proceeded against the ——— Water Co. for using the mails improperly and the result was that the company and its agents entered into a stipulation to discontinue the fraudulent advertising then in use. The method resorted to is indicated by the testimonial enclosed. I think you will agree with me that medical testimonials, and particularly the one under consideration, offer material barriers to our work.

The testimonial to which the official called particular attention was one issued by the exploiters of a so-called mineral water. It was, in a way, a community affair, being signed by no fewer than twenty physicians, all living in the same town from which the mineral water came. The testimonial read:

> I voluntarily affix my signature in support of the claims made for the medicinal value of ——— water and its therapeutic action in such conditions as Diabetes, Nephritis, Arterio-Sclerosis, High Blood Pressure, Excessive Uric Acid and kindred diseases of the kidney and bladder.

Now, the "claims made for the medicinal value" of the water in question were fraudulent. In fact, about ten years ago the government successfully prosecuted the exploiters of this water for making these claims on the bottles and forced them to delete the claims. The water concern, like many "patent medicine" fakers, having found that it could not lie on the trade package because the Food and Drugs Act had teeth, then confined its false statements to circulars that did not accompany the trade package, and were, therefore, not subject to the Pure Food Law. Fortunately, the fraud order activities of the Post Office Department made it possible to demand of this concern a degree of truthfulness that it evidently would not assume on its own initiative. It is a sorry spectacle, however, to see reputable members of the medical profession—all but two of the twenty signers of this testimonial were members of the American Medical Association—lending their names and scientific standing to back up fraudulent claims made for nostrums, whether these nostrums happen to be drugs or mineral waters. Twenty years ago the testimonial habit was common among physicians. At that time THE JOURNAL published; week after week, the names of individual physicians with the claims for which they were standing sponsor. At the same time the Propaganda Department of THE JOURNAL kept a card index of all American physicians who were giving testimonials. This file eventually contained more than ten thousand names and its compilation kept one clerk constantly busy. With the publicity given by THE JOURNAL, the testimonial habit waned, and during the last five or six years the file index has been discontinued. Is it going to be necessary again to hold up before the entire profession the names of individual physicians who have so far forgotten their professional obligations as to become *particeps criminis* in the exploitation of medical humbugs?

THE BANKERS SHARES SCHEME

Physicians throughout the country have been circularized recently by either one concern operating under different names, or by two or more concerns that use exactly the same advertising matter. The scheme is that of offering for sale "Bankers Shares" of the Ford Motor Company of Canada, Ltd. The physician is told that, as he is the owner of a motor car, he is "hereby extended the privilege of subscribing for, not to exceed Fifty [or some other specified number] Ford Motor Company of Canada, Ltd., Bankers' Shares at $10 each." The offer, however, is sent indiscriminately to physicians whether they own motor cars or not. The "Special Subscription Privilege" blank is an imposing looking affair with an orange colored border, a serial number and a date limit. The usual get-rich-quick line of "selling patter" is used, the physician being told that those who invested in Ford of Canada in 1904 have received more than $32,000 for each $100 invested; he is told, further, that if Ford of Canada grows to be as large as Ford of the United States, the "$100 invested in Ford of Canada should then be worth more than $15,000." The officers of Ford Motor Company of Canada, Ltd., are then named, and the impression is given that this company is behind the sale of these so-called Bankers Shares. The facts are that the Ford Motor Company of Canada is not even remotely concerned in the offering of these Bankers Shares, the only outstanding stock being the capital stock of $100 a share par value, which is quoted on the open market and the various exchanges. Those operating the "Bankers Shares" scheme have, it appears, acquired a block of Ford Motor Company of Canada stock which at the present time is quoted around $490 a share. They have then divided each share up into 100 parts which they call "Bankers Shares," and offer these to the physicians of the country at $10 a "share." In other words, physicians "are extended the privilege" of paying $1,000 a share for Ford Motor Company of Canada stock when the same stock can be purchased on the open market for less than $500 a share. One of the concerns, or, if it is one concern, one of the names under which it operates, has already been restrained from doing business in New York by an injunction issued some months ago on the grounds that the scheme is one that is calculated to deceive. The rest of the country is still "easy meat." Physicians will do well to throw these "Special Subscription Privilege" blanks into their waste baskets.

HEAT IN THERAPY

Heat in therapy involves a diversity of procedures, some of which have attained the dignity of clinical usage while others have remained in the less elegant but none the less beneficent routine of household practices. The thermotherapy of dry heat requires special technical devices for its application, whereas even a novice usually can apply the hot poultice under suitable conditions to bring relief. Heat may be not only a manifestation of pathologic conditions, as in inflammation, but also an agency for relief and cure. It is therefore important to understand the mechanisms through which it may influence the bodily processes. Pemberton[1] has recently summarized the observations made on the effects of exposing the human body to external heat in the form of radiations from electric lamps, the so-called "bake." It results in a heightened blood flow, an increased metabolism, and in the elimination of acids, chiefly carbon dioxid, which escape through the lungs, urine and sweat in the order of magnitude named. This leaves an excess of alkali in the blood, which then changes its reaction, becoming more alkaline. In the compensatory effort to meet this situation, the excess of alkali is eliminated through the sweat and urine. It follows from this that the benefit of hot packs and sweats in nephritis may be due not solely to the elimination of nitrogenous substances, as so long believed, but also, in part at least, to the relative alkalosis brought about by the elimination chiefly of the acid-forming carbon dioxid. The influence of these processes on the acidosis of nephritis or other conditions is obvious. There are also indications that harm may result from ill advised or undue application of heat leading to such alkalosis; for tetany may arise as a consequence of the latter. Even the use of heat, therefore, may be overdone.

MEDICAL LICENSURE IN ARKANSAS

Statistics regarding medical licensure published recently[2] show that Arkansas is one of the few states in which graduates of low grade medical schools still find easy access. As also shown in the statistics, the blame rests with the medical practice act, which provides not only for a board of medical examiners but also for a separate board of eclectic medical examiners; it was through the latter board that low grade graduates were licensed during the last several years. That the regular board of medical examiners has upheld reasonably high standards of medical education and licensure was also set forth in the statistics, and that statement has recently been supported in the report of a special committee appointed by the Arkansas Medical Society.[3] The report of that committee shows that the regular board of medical examiners has satisfactorily performed its duties and also that standards of medical licensure have been considerably advanced in Arkansas since 1903. Formerly the responsibility for medical licensure rested with county boards in the several counties of the state. In 1903, a new practice act provided for the three separate boards representing the regular, or nonsectarian, homeopathic and eclectic medical boards. Herein rested the weakness of the law of 1903, as one single competent board could have done the work more efficiently and with less confusion. In 1909 the law was strengthened by permitting the boards to examine only graduates of reputable medical schools, and in 1921 the rule of the regular board provided that only graduates of Class A medical schools were eligible for examination. However well this one board did its work, however, it could not safeguard the public against the incompetent graduates of low grade medical schools so long as a separate board was willing and continued to license them. Is it not time that the law be further amended so that the responsibility for licensing all who are to treat the sick will be in the hands of a single competent board of examiners?

Association News

THE ABRAHAM JACOBI MEMORIAL FUND

The committee for the Abraham Jacobi Memorial Fund in the Section on Diseases of Children wishes to make the following report for the year ending May 23, 1925:

Receipts:		
Balance on hand, June 1, 1924, after paying expenses for previous year		$ *609.40*
Received from subscriptions, June 1, 1924, to May 23, 1925	$857.50	
Interest on bank deposits	20.85	878.35
		$1,487.75
Expenditures:		
Expenses, foreign guests' *1924* meeting	$*300.00*	
153 copies of Transactions	232.50	
Secretary's expenses for *postage, mailing, etc.*	*46.55*	
Questionnaire for Committee on Infant Foods, *appointed by the section*	*90.20*	*669.25*
Balance on hand, *May 23, 1925*, to be placed in the sinking fund		$ 818.50

The amount left each year after paying expenses is to be put into the permanent sinking fund, which with its accrued interest will be allowed to reach the sum of $10,000, after which its interest will be spent for pediatric grants and investigations, for the expenses of foreign guests, etc.

The usual early subscriptions will cover the cost of Transactions sent to the members, for secretarial expenses, such as printing and mailing, and the balance added to the sinking fund.

At the suggestion of Drs. Talbot and Mulherin, the committee has decided to ask that all who feel so inclined donate an amount additional to their usual subscription to be placed at once in the sinking fund. *Friends of the Section on* Diseases of Children *who read this report may* know of generous contributors to child welfare projects who will give toward the establishment of this permanent fund.

The committee is now sending out blanks for subscriptions for the coming year.

Respectfully *submitted*.

Clifford G. Grulee, *Chicago, Chairman.*
Harold K. Faber, *San Francisco.*
W. A. Mulherin, Augusta, Ga.
Fritz B. Talbot, Boston.
Frank C. Neff, Kansas City, Mo., Secretary.
Fund Committee.

Standardized Beds.—According to *Colorado Medicine*, the U. S. Department of Commerce recommends that hospital beds be standardized and that they be 78 inches long, 36 inches wide and 27 inches high. At present, it is said, hospital beds are made in thirty-three different lengths, thirty-four different widths and forty-four different heights.

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[1] Pemberton, Ralph: A Summary of the Effects of External Heat on the Human Body, Am. J. M. Sc. **169**: 485 (April) 1925.

[2] State Board Statistics, J. A. M. A. **84**: 1339 (May 2) 1925.

[3] Editorial, J. Arkansas M. S., May, 1925, p. 263.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Dr. Hoskins Resigns.—Margaret M. Hoskins, Ph.D., has resigned as professor of microscopic anatomy at the University of Arkansas School of Medicine, Little Rock, to accept an appointment at the University and Bellevue Hospital Medical College, New York.

Personal.—Dr. Leonard R. Ellis has been elected president of the board of health of Hot Springs National Park, and Dr. Austin F. Barr, the new full-time city health officer, secretary.——Dr. John T. Palmer has been reappointed to the state board of medical examiners.——Dr. Francis Michael Smith, Franklinton, La., has been appointed health officer for Jefferson County and assumed his duties July 1.

CALIFORNIA

No Diphtheria in Contra Costa County.—For the first time in the history of either Richmond or Contra Costa County there are now no cases of diphtheria under quarantine, according to the city health officer, who attributes this record to the large number of children who have been immunized against the disease. He states that wherever diphtheria has occurred recently in his territory, it has been among persons who have not been immunized by means of toxin-antitoxin. More than 6,000 children in the district have been immunized.

Health Officers Appointed.—Dr. William J. Quinn, Eureka, has been appointed health officer of Humboldt County to succeed Dr. Francis R. Horel.——Dr. John W. Truxaw has been appointed health officer of Anaheim to succeed Dr. George A. Paige, and Dr. Gilbert S. Bovard of Sierra Madre to succeed Dr. Edward L. Jackson.——Dr. Joseph W. Camp has been appointed health officer of La Habra.——Dr. Smith McMullin has been appointed health officer of Yuba City, to succeed Dr. William L. Stephens of Meridian.

Is This Another Religio-Medical Masquerade?—Allen Mills, a chirothesian of Richfield, was recently charged with violation of the medical practice act. He stated, according to the state board of medical examiners, that he made a positive diagnosis by the examination of the pulse, by examination of other parts of the person of the patient, and by "iridiagnosis." Mills claimed to be an ordained minister of the Chirothesian Church of Faith. M. T. Larkin, a chirothesian of Los Angeles, was also charged recently with violation of the medical practice act. His place of business is reported to have contained a large quantity of remedies, the bottles being labeled for such diseases as cancer, paralysis, rheumatism and tumors; on the wall was a diploma from the Western College of Drugless Therapeutics and a sign reading "We diagnose your ailments if you wish us to do so." A pamphlet entitled "The Chirothesian" states that the board of trustees of the church intend the word "Chirothesian" to "have as much significance as that of minister of an orthodox church or as even that of M.D. after any person's name. The word "Chirothesian" was adopted "as the title under which the ordained ministers of the church should advertise and practice their healing work." The pamphlet says also that: ". . . While working under this title healers ordained to the work are protected from annoyance by the state medical board."

CONNECTICUT

Unusual Amount of Typhoid.—The state department of health reports that typhoid fever has been more prevalent throughout the state thus far this year than for any similar period in the last three years. There were fifty-two cases in the first four months, and fifteen deaths. The increase was not due to any sudden outbreak. The cases were distributed over the various months in the season when typhoid is usually least prevalent.

DELAWARE

State Accepts Brandywine Sanatorium.—The last legislature, just adjourned, accepted the offer of the Delaware Anti-tuberculosis Society to take over by the state the Brandywine Sanatorium, which was owned and controlled by the society. The Brandywine Sanatorium is now a state institution and was turned over free of indebtedness.

ILLINOIS

Narcotic Law Violations.—A federal grand jury in Chicago indicted, May 29, it is reported, Dr. William C. Bridge, Elgin, for violation of the Harrison Narcotic Law. Dr. Bridge was held to trial on $2,500 bonds.——Dr. Edwin V. Heaton, Danville, was arrested, May 22, for violation of the Harrison Narcotic Law, and at a preliminary hearing, bonds were fixed at $3,000, it is reported.

Joint Society Meetings.—At the joint meeting of the Rock Island and Scott County medical societies, East Moline, June 9, Dr. Dean Lewis, Chicago, spoke on "Fractures and Their Complications"; Dr. Oliver J. Fay, Des Moines, Iowa, on "Some Bone Lesions of Obscure Etiology," illustrated with lantern slides, and Dr. James F. Cooper, New York, medical director of the clinical research department, American Birth Control League, on "Birth Control." About 150 were present at the dinner.

Chicago

Personal.—Dr. Erwin P. Zeisler has been elected president of the Chicago Dermatological Society.

Editor Resigns.—Joseph J. Weber, for six years editor of the *Modern Hospital*, has resigned to become director of Grace Hospital, New Haven, Conn. Mr. Weber formerly was associate director of the Boston Dispensary, Boston, and executive secretary of the committee on hospitals of the New York State Charities Aid Association.

Professor Michelson Receives Distinguished Service Professorship.—At the one hundred and thirty-seventh convocation of the University of Chicago, June 16, Prof. Albert A. Michelson, head of the department of physics, was appointed to the first of the Distinguished Service Professorships recently established at the university with a special fund of $200,000, the gift of Martin A. Ryerson, formerly president of the board of trustees and donor of the Ryerson Physical Laboratory.

Opinion of Public Health Institute.—Following the receipt of many requests for an opinion of the Public Health Institute of Chicago, the official *Bulletin of the Chicago Medical Society* (June 20) states that it is an unethical institute in every sense of the word; that the physicians who work for the institute are not members of the Chicago Medical Society, "some by choice and some by expulsion," nor has the institute any well known genito-urinary specialist on its staff; that the institute is a private corporation practicing medicine and charging fees; that it uses full page advertisements as a means of procuring business, and that physicians who connect themselves with the institute will be brought before the ethical relations committee of the Chicago Medical Society.

INDIANA

Personal.—Dr. and Mrs. Homer H. Wheeler, Indianapolis, have donated a large portion of land north of Fiftieth Street to the board of public works for park purposes.——Dr. Alfred Henry, Indianapolis, has been reelected president of the Marion County Tuberculosis Association.——Dr. Charles R. Sowder, Indianapolis, has resigned as president of the Clinical Society of the Methodist Hospital.

Hospital News.—Construction has been started on the $300,000 nurses' home at Illinois Street and Fall Creek Boulevard, Indianapolis, on the property of St. Vincent's Hospital.——Dr. John F. Loomis has been elected president of the staff executive committee of the Grant County Hospital Association, Marion; Dr. Edwin M. Trook, vice president, and Dr. Miles J. Lewis, secretary-treasurer. They will take office in September.——The Sisters of St. Joseph will erect a $100,000 fireproof hospital with a capacity of twenty-five beds, at Elwood.

Responsibility for Public Water Supplies.—Recently a jury in Adams County returned a verdict of $9,000 against the city of Fort Wayne and the Pennsylvania Railroad Company in a suit which held these corporations responsible in an outbreak of typhoid fever of more than 150 cases and twenty-four deaths, as the result of a cross connection between the industrial water supply of the Pennsylvania shops and the public water supply of Fort Wayne. The suit was brought by the administrator of the estate of a victim of the epidemic. It was the first of its kind in the state.

KANSAS

Personal.—Dr. Milton O. Nyberg, who recently resigned as secretary of the state board of health, has been appointed county health commissioner for Ottawa County, it is reported.

LOUISIANA

Personal.—Dr. Kosta Drensky of Bulgaria, fellow of the International Health Board, recently visited New Orleans and other places in the state to inspect the antimalaria work. Dr. Drensky has been assigned to antimalaria work in Bulgaria.——Dr. Joseph O. Weilbaecher, New Orleans, has [illegible] appointed physician to the police department, to succeed [illegible]. Leonard C. Chamberlain.

Resolutions of Health Officers.—At the recent state conference of health officers in New Orleans, resolutions were passed recommending that health boards try to secure compulsory vaccination of school children and that laws be provided to prevent the spread of rabies by the vaccination of dogs. The shellfish conference, which met the following day, agreed on a closed season for oysters, from May to September, that shucking houses must be provided with cement floors and screens and that all employees should have health certificates.

MARYLAND

Research Building Dedicated.—The new medical research building at the Eudowood Sanatorium, Towson, was dedicated, May 30. The structure cost about $90,000, with an additional $20,000 for equipment. The research department is a new activity at the institution. The building contains laboratories, hydrotherapy department, operating room, space for 150 beds, ten private rooms and sleeping porches. The whole work was done with funds obtained by popular subscription in 1923.

Hebrew Hospital Planned.—The hospital unit planned for the Hebrew Hospital and Asylum, when completed and equipped, will represent an investment of more than $1,000,000. The new building, at the corner of Rutland Avenue and Monument Street, will be an eight story, fireproof structure and will add 105 rooms to the hospital and accommodate forty persons in the home for the aged, making the total number of hospital beds more than 300. The plans include remodeling the Frank Building, the top floor of which will be known as the Nathan and Gertrude Rohr Memorial and will contain twenty-eight beds for children. The total number of beds in this building will be 111.

Children's Fund for Johns Hopkins.—A campaign to raise $1,500,000 for the endowment of the Johns Hopkins Children's Fund will be launched in Baltimore early in October under the auspices of the Johns Hopkins Half-Century Committee, of which Mr. Daniel Willard is chairman. The fund is to provide for the free care of sick and crippled children in the city. The department for children at the Johns Hopkins Hospital spends annually $113,000, of which $80,000 is devoted to the treatment of needy children. About $65,000 of this amount has been coming from the general income of the hospital and a gift of $700,000 from the General Education Board. This gift was intended for a building project and can no longer be used for the children's fund. The hospital is operating at a deficit and can no longer make its contribution. Since the Harriet Lane Home was opened in 1912, the hospital has treated 50,000 children.

MASSACHUSETTS

License Revoked.—The board of registration in medicine, June 4, revoked the registration of A. W. Reibstein, Boston, who is now serving a sentence in the state prison following conviction on a charge of performing a criminal abortion.

Tuberculosis Survey of Boston.—Murray P. Horwood, Ph.D., assistant professor of biology and public health, Massachusetts Institute of Technology, will conduct a tuberculosis survey of Boston this summer for the Boston Tuberculosis Association. This work will be performed with the cooperation of the state and city health departments, hospitals, clinics and voluntary health agencies. The facts ascertained will be used as a basis for a more comprehensive antituberculosis program.

University News.—Prof. William J. Crozier has been appointed associate professor of general physiology at Harvard University, to serve from September 1. In the medical school, three instructors have been appointed assistant professors. They are Drs. Cyrus C. Sturgis, named assistant professor of medicine; Frederick C. Irving, assistant professor of obstetrics, and Calvin B. Faunce, Jr., assistant professor of otology.——Prof. George H. Chase, Ph.D., has been appointed dean of the Graduate School of Arts and Sciences.

Mental Health Conference.—Under the auspices of the Massachusetts Society for Mental Hygiene, a mental health conference was held at Fall River, May 26. Dr. Samuel Tartakoff, U. S. Veterans' Bureau, Boston, spoke on "Mental Health for the Community"; Dr. Ralph M. Chambers, director of the state division for the examination of prisoners, on "Psychopathic Personality: A Community Problem," and Dr. Henry B. Elkind, medical director, Massachusetts Society for Mental Hygiene, on "What Fall River Can do to Help."

MICHIGAN

Deaths from Epidemic Encephalitis.—There have been sixteen deaths in Michigan in the first four months of this year due to epidemic encephalitis, and thirty-seven cases reported. Compared with that of the last two years, this incidence is rather high. Six more cases have been reported since May 1. This disease has been reportable by law in Michigan since 1921.

City Offers Auditorium to County Society.—The mayor and common council of Detroit have approved the appropriation for the first unit of the new buildings for the Detroit College of Medicine and Surgery, and offered the Wayne County Medical Society the use of the auditorium of this new building for its meetings and exhibits. The offer has been accepted by the council of the society.

MINNESOTA

New Health Film.—The Hennepin County Tuberculosis Association showed a new health film, June 18, and offered a prize of $25 for the most suitable title of the play. As part of an educational campaign, after the contest for a title closes, the film will be shown in the parks through the summer.

Institute for Child Welfare.—The gift of $245,000 for the establishment of an institute for child welfare from the Laura Spelman Rockefeller Memorial, Dean Kelly of the university announces, will enable Minnesota to contribute to knowledge of the child of preschool age. The gift will be available at the rate of $49,000 a year for five years. A home will be established to which a small number of infants may be sent, and a nursery school for children up to 5 years of age. The institute will study the development of habits, means of bettering child health, methods of instructing children, and the most normal reactions to environment.

Minnesota Conference for the Disabled.—A new organization known as the "Minnesota Conference for the Disabled" is the outcome of a convention of delegates from all parts of the state, representing educational, social, civic and business interests. The constitution adopted outlines the purposes of the organization as (1) to promote suitable rehabilitation services for the physically handicapped; (2) to further the correlation of activities for disabled persons, and (3) to create an agency to receive and administer special funds for disabled persons. The organization will be administered by a board of fifteen directors and there will be two regular meetings each year, a two day session in April or May and a one day session in the fall.

MISSOURI

Clinical Conference.—The third annual fall clinical conference will be held, October 5-9, at the Kansas City Athletic Club. Clinics have been arranged at all allied hospitals in greater Kansas City.

Suit to Oust Diploma Mills.—It is reported that quo warranto proceedings were filed in the state supreme court, June 16, to oust the St. Louis College of Physicians and Surgeons and the Kansas City College of Medicine and Surgery from the state on the grounds that they sell diplomas.

Hospital News.—Dr. R. Emmet Kane, St. Louis, has been elected president of the St. Louis Association of Hospitals, and Dr. George M. Tuttle, vice president. This is a new organization composed of twenty-six of the standard hospitals in the city, and its purpose is to promote their medical, social and scientific development.

Fund for Library of Ophthalmology and Otolaryngology.—The St. Louis Eye, Ear, Nose and Throat Infirmary has donated to the St. Louis Medical Society almost $3,500 in securities, to be known as the St. Louis Eye, Ear, Nose and Throat Infirmary Fund, the income of which will be used equally to maintain the libraries of the departments of ophthalmology and otolaryngology. The infirmary also gave to the St. Louis Medical Society $350 in Liberty Bonds to aid in the completion of the Medical Library Building.

MONTANA

State Medical Meeting.—At the annual meeting of the Medical Association of Montana, Lewistown, July 8-9, among the speakers will be Dr. John de J. Pemberton, Rochester, Minn.; Dr. Floyd S. Clarke, professor of pediatrics, University of Nebraska College of Medicine, Omaha; Dr. William C. Woodward, executive secretary of the Bureau of Legal Medicine and Legislation, American Medical Association; Dr. Albert R. Mitchell, trustee of the American Medical Association, and Dr. Henry Schmitz, professor of gynecology, Loyola University School of Medicine, Chicago. Dr. William F. Cogswell, Helena, will speak on "Tularemia"; Dr. F. H. Parker, Hamilton, "Recent Results in the Study of the Tick Virus of Rocky Mountain Spotted Fever"; Dr. George W. Swift, Seattle, on "The Use of Air in the Diagnosis of Intracranial Lesions," and Dr. Henry S. Plummer, Rochester, Minn., on "The Diagnosis and Treatment of Exophthalmic Goiter." The annual smoker will be at the Elks Club, Wednesday evening. Appropriate entertainment has been arranged for the ladies.——The Montana Public Health Association will meet, July 6-7, and the Montana Academy of Oto-Ophthalmology, July 7, the guests of honor being Dr. George W. Swift, Seattle, and Dr. Harry W. Woodruff, Chicago.

NEVADA

National Board Certificate Accepted.—At the last meeting of the Nevada State Board of Medical Examiners a resolution was passed providing for granting a license to practice medicine without further examination to candidates who hold the certificate of the National Board of Medical Examiners.

NEW JERSEY

Food Handlers Rejected.—In the examination of 7,589 food handlers in Newark in 1924, there were 796 suspicious cases. These persons returned for reexamination, and of this number twenty were rejected because of tuberculosis, and four because of venereal disease; one was a typhoid carrier.

Child Labor Violations.—Following an inspection begun, May 20, by the state director of employment, persistent violations of New Jersey laws by Philadelphia agencies were reported to Dr. Andrew F. McBride, state labor commissioner, June 6. No child found working possessed an age or schooling certificate, it was reported, and the hours of employment for children were ten hours daily with rest periods unknown. Children under the age of 10 years working on the farms formed 10 per cent. of the total. Accompanying the report was a list of fourteen agents who were said to have violated the law in the last two years.

Iodin Content of Public Water.—The state board of health is making a study of the iodin content of public water supplies in New Jersey. There are no endemic areas of goiter, although cases are seen in most parts of the state. Thus far the examination of deep wells at Asbury Park, Freehold and from the creek at Bridgeton show an entire absence of iodin. Certain deep wells at Princeton showed 8 parts per billion, at Camden 5.3 parts per billion, in the Delaware River at Trenton 1.7 parts per billion, and at Atlantic City 7.4 parts per billion. The chemist states that of the waters examined not any contains a large amount of iodin. Fortunately, sea foods, which contain relatively high percentages of iodin, are readily available in New Jersey.

NEW YORK

Hospital for Middletown.—The trustees of the Elizabeth Horton Memorial Hospital have been authorized by the supreme court to use $311,000 from the estate of Eugene H. Horton to erect a new hospital at Middletown. Mr. Horton left $100,000 for the new building and a $500,000 endowment fund to maintain it. The institution will be named after the founder's mother.

New York University Acquires Dental College.—The New York College of Dentistry will become part of New York University this month, as was announced, June 20, by Chancellor Brown. It will be known as the School of Dentistry of New York University. The dental college was established sixty years ago. Its enrolment for the year just ended was about 600.

Number of Typhoid Carriers.—The total number of typhoid carriers listed in the state, inclusive of New York City and the state hospitals, April 1, was 106, ten of whom had been added since Oct. 1, 1924. Two of the ten carriers were discovered by attending physicians; two by representatives of the state health department; one by the local health officer; one by the attending physician and the health officer; one by the health officer and the representative of the state health department, and one by the attending physician and the representative of the state health department.

Blind Adults May Conduct News Stands.—The governor has signed a bill that amends the general city law concerning licenses to adult blind persons. The amendment provides that the mayor of any city may issue a license to any adult blind person for vending goods or newspapers in such places as he may set aside, and that the license shall be for one year and no charge shall be made. A license, however, shall not be issued to a blind person unless he is a citizen of this country and a resident for three years in the city in which he desires a license. This law applies to any city in the state, whereas the previous law applied only to cities having a population of more than 1,000,000 inhabitants.

Cost of Publications of State Society.—The *New York State Journal of Medicine* cost the state society in 1924 $21,447, an increase of $14,000. The committee on publication says that the increase is not large, in view of the fact that the journal was published weekly during the legislative session, making a volume of twenty-one issues instead of twelve, as in the previous year. The directory published by the state society cost $10,000, an increase of $2,000 over the cost of publication of the directory in 1923, which was due to the increase in membership of the state society and to the addition of 500 more practicing physicians in New York, New Jersey and Connecticut, while the receipts from advertisements and sales were practically the same as in 1923.

Report of Committee on Legislation.—A summary of the work of the committee on legislation of the Medical Society of the State of New York appears in its recent report to the house of delegates. There were introduced in the senate 1,474 bills, all of which were gone over by the committee, and forty-five of which were followed throughout the course of the legislative session. There were 1,721 bills introduced in the assembly, of which seventy-three were kept on the committee's list until the session adjourned. There were eight different varieties of chiropractic bills introduced at this session, an antivaccination bill, which died in committee, a birth control bill and several amendments to the workmen's compensation law. The Carle-Dunmore bill, which provided for stricter regulation of the practice of medicine, and which was endorsed by the committee, failed of passage, the report says, through the opposition of Senators George R. Fearon, Onondaga County, and Leonard W. H. Gibbs of Erie County, both of whom sponsored cult bills. Among many other things, the committee drew up, wrote and filed twelve briefs in opposition to bills presented and eight briefs in favor of bills in which the state society was interested. The committee sent out, in about a year ending April 1, 1925, about 6,000 pieces of first-class mail and received in that time 3,000, in addition to 1,000 pieces of second-class mail and a large number of magazines, all of which were read. Twenty-two different form letters were sent out at various times during the year to county chairmen, secretaries and presidents of county societies.

New York City

Society News.—At the annual banquet of the Bay Ridge Medical Society, June 9, Dr. Henry F. Bruning was elected president; Dr. Frederick E. Elliott, vice president; Dr. Clifton L. Dance, secretary, and Dr. Henry W. Gissel, treasurer.

Child Health Training.—The executive committee of the Laura Spelman Rockefeller Memorial has made an appropriation to Cornell University for the development of instruction and training in child care in the State College of Home Economics for a period of four years, beginning July 1, 1925. The first International Congress on Child Welfare will be held at Geneva, August 24-28 of this year.

Dr. O'Hanlon Goes to Jersey City.—Dr. George O'Hanlon, for fifteen years medical superintendent of Bellevue and Allied Hospitals of this city, has been appointed superintendent of the City Hospital, Jersey City, N. J. Dr. O'Hanlon was formerly president of the American Hospital Association, and for ten years was chairman of the hospital construction committee of the New York Hospital Conference and for many years chairman of the conference. He has been decorated by the king of Italy for work among the Italians of this country.

Physicians Honored.—A testimonial dinner was given to Judah L. Magnes, dean of the Hebrew University in Palestine, at the Waldorf Hotel, May 23, by the American Jewish Physicians' Committee of which Dr. Nathan O. Ratnoff is president. Dr. Israel Strauss of Mount Sinai Hospital presided.——The eighty-sixth anniversary dinner of the Alumni Association of New York University and the Bellevue Hospital Medical College was held, May 23, at the Biltmore. he guest of honor was Dr. George David Stewart, aged 89, a former president of the Academy of Medicine. Dr. Nathan B. Van Etten presided.

Personal.—Dr. William B. Brinsmade has been appointed a chevalier of the Legion of Honor.——Dr. Alphonse R. Dochez received the degree of doctor of science from New York University at the recent commencement for his work on scarlet fever.——The honorary degree of doctor of science was conferred on Donald D. Van Slyke, Ph.D., and Winthrop J. V. Osterhout, Ph.D., both of the Rockefeller Institute for Medical Research, at the recent commencements at Yale University and Harvard University, respectively.——Dr. Charles Ogilvy has been appointed professor of orthopedic surgery in the New York Post-Graduate School and Hospital.

NORTH CAROLINA

Drs. McNairy and Newbold Resign.—Dr. Charles B. McNairy, superintendent, and Dr. William A. Newbold, psychiatrist, at the North Carolina State Training School for Feeble-Minded, Kinston, resigned last week, and Dr. William H. Dixon, Ayden, for several years an active member of the board of trustees of the school, was unanimously elected superintendent. It is reported probable that the position of psychiatrist will also be filled by Dr. Dixon. Dr. McNairy will resume practice at Lenoir, from which place he came to the state school more than twelve years ago.

Hospital News.—Dr. Harris H. Bass, Henderson, has closed his private hospital and will remove to Philadelphia.——The Jane Wilkes Memorial Annex to the Good Samaritan Hospital (colored) in Charlotte was opened, June 22.——Dr. Albert DeK. Parrott, Kinston, has purchased nine tenths of the stock of the Parrott Memorial Hospital of that city. Dr. James M. Parrott, surgeon, will continue as attending surgeon; other specialists will be added to the staff.——The corner stone of the new Memorial Hospital, Kinston, "dedicated as a memorial to the soldiers and sailors of the World War from Lenoir County," was laid, June 12, with appropriate ceremonies.——A communication from Director Hines advises that improvements at U. S. Veterans' Bureau Hospital No. 60, Oteen, will begin at once. A permanent mess hall, kitchen and diet kitchens will be built this year, and in 1926 a diagnostic building and additional quarters. Most of the construction at this hospital built during the World War was temporary; beginning in 1920, the government has constructed all new work along permanent lines.

PENNSYLVANIA

Governor Signs Charity Bill.—Governor Pinchot has signed the "Steel Bill," which provides $500,000 for the new construction for Laurelton State Village for Feebleminded Women.

Annual Clinic of County Society.—The Westmoreland County Medical Society held its annual clinic, June 17, in Latrobe under the auspices of the Latrobe Academy of Medicine. Dr. Nelson G. Russell, professor of clinical medicine, and Dr. James E. King, professor of gynecology, University of Buffalo School of Medicine, Buffalo, conducted the afternoon session. Dr. Lawrence Litchfield, Pittsburgh, spoke on "Liver Function Tests and Visualizing the Gallbladder Contents." At the dinner, among others, John G. Bowman, LL.D., chancellor, University of Pittsburgh, spoke on "What the Cathedral of Learning Means to the Medical Profession."

Convention at Mont Alto.—The first general meeting of the Pennsylvania Public Health Association since its formation this year, opened, June 22, with more than 300 physicians and health officials present, in the auditorium of the Mont Alto Tuberculosis Sanatorium. Dr. Charles H. Miner, secretary, Pennsylvania Department of Health, Dr. John L. Laird, of the state department of health laboratories, Dr. B. C. Frontz, Dr. Victor G. Heiser of the Rockefeller Foundation, Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, and Dr. Samuel J. Crumbine of the American Child Health Association, were among the speakers. The following officers were elected: Dr. Charles H. Miner, president; Dr. Wilmer Krusen, director of public health, Philadelphia, and Dr. Carey J. Vaux, health director of Pittsburgh, vice presidents, and Dr. William C. Miller, secretary and treasurer.

Philadelphia

Society News.—Dr. Emery R. Hayhurst, professor of hygiene, Ohio State University, Columbus, recently addressed the section on public health and industrial medicine, College of Physicians of Philadelphia, on "The Value of Health in Industry."

Personal.—Dr. Lyn Waller Deichler, Philadelphia, has been appointed visiting ophthalmologist to the Philadelphia General Hospital, to succeed Dr. John W. Croskey, who resigned after twenty-five years' service.——Dr. Ross H. Skillern received the honorary degree of doctor of science from Ursinus College at the commencement, June 8.——Drs. Mary B. Buchanan, George E. de Schweinitz, S. Lewis Ziegler, William Campbell Posey and Heilner Maxwell Langdon will attend the Congress of English-Speaking Ophthalmologists in London, the week of July 13.

Hospital News.—The new building of the Samaritan Hospital at Broad and Ontario streets, erected at a cost of $506,000, was opened for inspection, June 18. Its capacity is 305 beds.——The corner stone of the new Shriners' Hospital for Crippled Children on Roosevelt Boulevard was laid, June 24.——Dedication exercises were held, June 25, at the "sun-cure sanitarium" of the Philadelphia Health Council and Tuberculosis Committee, Chestnut Hill. A demonstration by twenty-five children of heliotherapy was part of the exercises of the Christmas seal service in the Lucas Cottage, recently renovated at a cost of $15,000. The speakers included Drs. Wilmer Krusen and Charles J. Hatfield.

SOUTH DAKOTA

Health Education Publicity.—The state board of health during March provided addresses, or exhibited films on health subjects, before nineteen community groups having a total attendance of 2,615. This involved travel of a thousand miles by railway, bus, state car and local livery. All of the appointments were kept as arranged but one, when a lecturer within a mile of his destination became snowbound.

VIRGINIA

Several Poropathists Want to Be Licensed.—Dr. John Shelton Horsley, Richmond, notes in the *Virginia Medical Monthly* that the legislature in 1918 provided a way through which Arthur de Collard was enabled to practice "poropathy" without examination or inquiry into his scientific attainments by the state board of medical examiners. Arthur claimed to be a cousin of Napoleon and a graduate of several European universities. His diplomas, he said, had all been burned, and he would not answer the simplest question on the elements of medicine and surgery. The bill defined poropathy and manipulative surgery as a new branch of therapeutics. It employs no medicine taken through the stomach and does not employ the knife. Healing and curative agencies and lotions, however, applied directly to the diseased organs and to the nerves controlling those organs, through the pores of the skin and mucous membrane, which are opened by medical manipulation, immediately reach the disease or ailment through the eliminating organs, and by this process heal and cure most of the ills to which flesh is heir, including: internal cancer, cerebrospinal meningitis, epilepsy, tuberculosis of the joints and heart disease. This system, according to the bill, would adjust, heal and cure broken bones, sprains and dislocations. After a committee substitute for the bill and various amendments to the substitute had been rejected, the bill was passed and Arthur de Collard through it acquired the right to practice poropathy in Virginia. Dr. Horsley says there are now several poropathists in the state who have taken a course under de Collard and who desire to be licensed to practice.

WASHINGTON

Dr. Turner Resigns.—Dr. Paul A. Turner, state director of health, has resigned and accepted a position with the department of health and sanitation, Seattle, as medical inspector.

County Commissioners Bar Drugless Practitioners.—Having rescinded their previous action, the commissioners of Pierce County have decided that only doctors of medicine may practice in the county hospital.

Library Presented to Medical Society.—The board of trustees has accepted the gift of the medical library of the late Dr. David A. Mitchell, presented by Mrs. Mitchell. The books will be given to the Washington Medical Library Association for the use of its members.

Personal.—Dr. Hiram M. Read, Seattle, has been appointed to the Veterans' Bureau Medical Service and assigned to the Portland office.——Dr. Frank W. Nagler, Yakima, has been appointed city and county health officer to succeed Dr. Howard H. Smith, who has resigned on account of poor health.

Hospital News.—The Swedish Hospital, Seattle, will construct a 300 bed building adjacent to the present hospital. A unit containing 100 beds and costing $250,000 will be constructed first, and the hospital association has the funds in hand for this unit. The remainder will be constructed when necessary.

WEST VIRGINIA

Injunction and Abatement Law.—A law becomes effective, July 15, which provides for the closing as a nuisance of any place for purposes of prostitution. The prosecuting attorney of the county, or the attorney general of the state, may bring suit in equity and should they fail to enforce the law, a resident may bring a suit in equity in the name of the state to close up the place. The law permits the abatement of such a nuisance and perpetually enjoins any person from further maintenance thereof. There are still ten states, according to the U. S. Public Health Service, without laws for this purpose. Texas has a law without the abatement feature; the New Jersey law was declared unconstitutional in 1919, and the Maryland law became ineffective two years after the World War.

CANADA

Society News.—The Canadian Medical Association has adopted an official motor emblem which is now being sold to members for $2.50. The emblems are serially numbered, and a record is kept of them by the association.

Personal.—Dr. Richard G. Large, Hazelton, B. C., has been appointed health officer and school inspector for that district.——Dr. Hibbert Winslow Hill, London, Ont., has been appointed professor of bacteriology and professor of nursing and public health at the University of British Columbia, to succeed the late Dr. R. Mullin.——Dr. Hill H. Cheney, for eleven years assistant in the roentgen-ray department of the Royal Infirmary Hospital, Montreal, has been appointed in charge of the roentgen-ray and physiotherapy department of the Civic Hospital at Ottawa, one of the largest hospitals in Canada.——Dr. Avilla Chabott, formerly of Verdun, has been appointed inspector of health and sanitation for the district of Montreal.——Dr. Victor G. Heiser of the International Health Board, New York, was recently tendered a reception at the Dalhousie Health Center, to meet members of the Dalhousie faculty and students of the graduating class.——Dr. Charles F. Martin, dean of the faculty of medicine, McGill University, Montreal, gave an address, May 28, at the opening of the memorial gates erected by Lady Roddick at the entrance to McGill University in memory of her husband, a former dean of the medical faculty.——Dr. Roy B. Jenkins, Alix, Alta., has been appointed provincial medical health officer with headquarters at Edmonton.

GENERAL

American Heart Association.—The offices of this association were moved recently to the office of the New York Tuberculosis Association at 244 Madison Avenue, New York City. The executive office will continue to be at 370 Seventh Avenue.

Monument to Dr. Darling.—It is reported that the Lebanon government has decided to erect a monument to Dr. Samuel Taylor Darling of the Rockefeller Foundation and Dr. Norman Lothian of London, both of whom were killed in an automobile accident in May.

National Research Fellowships.—A meeting of the Board of National Research Fellowships in the Biological Sciences will probably be held the first week in September. Applications to be presented at this meeting should be filed by August 1. Application forms may be obtained from the secretary, Board of National Research Fellowships in the Biological Sciences, National Research Council, Washington, D. C.

Rockefeller Foundation Trains Six Bulgarian Physicians.—A representative of the Rockefeller Foundation in Europe, Dr. Slaskar Michael Gunn, before his departure from Sofia after his visit of inspection of sanitation in Bulgaria, arranged for the sending of six local physicians for a year's course of study in American hospitals. These physicians are to be selected by competitive examination, and will leave next September.

Trend of Whooping Cough Mortality.—In twenty-three American cities, the death rate from whooping cough between 1885 and 1923 declined at the rate of 4 per cent. of the mean rate, yearly, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company. It followed a fairly consistent course from 1885 to 1915, but departed on the high side of its previous norm in the following years. From 1915 to 1923, the average death rate was 7.6 per hundred thousand.

Manufacturers of Groceries Endorse Lye Legislation.—Charles W. Dunn, general counsel of the American Grocery Specialty Manufacturers' Association, recently informed the committee on lye legislation of the American Medical Association that the manufacturers of lye unqualifiedly endorsed the legislation proposed by the American Medical Association and pledged the cooperation of the lye section in the enactment of this legislation and in the education of the public against the accidental consumption of lye.

National Committee for the Prevention of Blindness.—The new school term recently opened with 207 sight saving classes, a gain of twenty over the previous year. Two series of summer courses will be given in 1925, one by Peabody College, Nashville, Tenn., and one by the University of Cincinnati. These courses offer lectures, observation in a demonstration class and clinical work. A survey of the eyes and ears of 8,000 school children of Jamestown is being conducted by the health department of the University of the State of New York. Dr. Emily A. Pratt is in charge of the survey.

Tuberculosis Mortality.—There are now fewer than 100,000 deaths from tuberculosis annually in the United States, whereas a few years ago there were 150,000 for a smaller population. A statistical analysis by the New York Tuberculosis and Health Association states, however, that there are still twelve states and the District of Columbia which in 1923 had a tuberculosis death rate or more than 100 per hundred thousand population. Four of these, however—Arizona, New Mexico, Colorado and California—should be excluded from this list on account of the many nonresidents who go there for treatment. There are remarkably low rates in Kansas (40), Utah (36) and Nebraska (33). The analysis shows that in thirty-two states in 1923 there was a decrease in the tuberculosis death rate and in thirteen states and the District of Columbia there was an increase, notably also in Arkansas, Florida and Indiana. There are more than 66,000 beds for tuberculous patients in 714 institutions in the United States. In this total there are seventy-five federal institutions with 11,458 beds, first for ex-service men, and secondly, 584 beds in eleven institutions for Indians.

***Dr. Long* Goes to Chile.**—At the request of the government of Chile, Dr. John D. Long, Assistant Surgeon General, U. S. Public Health Service, will become technical adviser in public health to the Chilean ministry of hygiene. Dr. Long, who has been in charge of the Division of Foreign Quarantine Immigration and International Relations of the U. S. Public Health Service, is familiar with the public health problems of Latin America, having been for more than twenty-five years a quarantine officer in the Public Health Service. He was a member of the U. S. delegation to the Fifth International Conference of American States at Santiago in 1923; and has made several visits to Chile and other countries of Latin America in his capacity as vice director, Pan-American Sanitary Bureau. As a result of the Fifth International Conference and the advocacy of public health measures there by

George E. Vincent, president, Rockefeller Foundation, the government of Chile has been greatly interested in improving sanitary conditions and in reducing the death rate. One of the first steps taken was the creation of a ministry of hygiene. Through diplomatic channels, the government requested the services of Dr. Long, and his assignment was arranged by Surgeon General Cumming. Dr. Long sailed, June 18.

Dr. Rappleye Heads Commission on Medical Education.—It was announced, June 21, that Dr. Willard C. Rappleye, professor of hospital administration, Yale University School of Medicine, and director of the New Haven Hospital, New Haven, Conn., has resigned to become director of a commission on medical education which, under the auspices of the Association of American Medical Colleges, will survey the field of medical education in the United States. The survey will cover a study of premedical education, medical education and the relation of medical education to medical licensure, public health and medical practice. To complete the survey, it is expected, will require about four or five years. *The other members of the commission will be:*

Abbott Lawrence Lowell, Ph.D., president of Harvard University.

Dr. Ray L. Wilbur, president of Stanford University and president of the Association of American Universities and a member of the Council on Medical Education and Hospitals of the American Medical Association.

Dr. Walter A. Jessup, president of the State University of Iowa and a member of the National Association of State Universities.

Chancellor Samuel P. Capen, LL.D., of the University of Buffalo and president of the American Council on Education.

Sir Robert A. Falconer, president of the University of Toronto, representing Canadian educational institutions.

Dr. Olin West, Secretary of the American Medical Association, representing the organized medical profession.

Dr. Walter L. Bierring, Des Moines, Iowa, representing the National Board of Medical Examiners.

Dr. George Blumer, New Haven, Conn., representing the Association of American Physicians.

Dr. Hugh Cabot, dean of the University of Michigan Medical School and president of the Association of American Medical Colleges.

Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, representing the Carnegie Corporation, New York.

Dr. David L. Edsall, dean of Harvard Medical School, representing the Association of University Professors.

Dr. Henry Gordan Gale, Chicago, dean of the Ogden Graduate School, representing graduate education.

Dr. Thomas S. McDavitt, St. Paul, president of the Federation of State Medical Boards.

Prof. Lafayette B. Mendel, Sc.D., Yale University, of the American Association for the Advancement of Science.

Dr. William A. Pusey, Chicago, of the American Medical Association.

Dr. Hans Zinsser, Boston, of the American Public Health Association.

LATIN AMERICA

Hospital for Women.—The Arzobispo Loayza Hospital for Women at Lima, Peru, was recently opened. It was built by the Sociedad de Beneficiencia Publique of Lima at a cost of $794,000. It is fireproof and earthquake proof. There is an administration building, two medical and two surgical pavilions, and wards to accommodate sixty patients; also a nurses' home and training school to accommodate 150 nurses.

Personal.—Dr. Albert Chueco has returned to his surgical service at Buenos Aires and editorial work on the *Semana Médica* after a year abroad.——Prof. P. Duval, of the chair of surgery, Paris, leaves in August to deliver a series of interchange lectures on surgical topics at Buenos Aires.——Dr. J. C. Navarro, president, and the other officials of the Argentine Medical Association have issued an appeal for a grand get-together banquet of the more than a thousand members of the association.——Dr. José Ingenieros is the official delegate from Argentina to the Charcot centennial celebration.

Control of Venereal Diseases.—The Republic of Chile recently established a division of social hygiene for the control of venereal disease with three departments—education, control and healing. The first is responsible for the creation of social hygiene professorships in the medical schools and for suggestions in social hygiene instruction to be included in public education, for the control of prostitution and the supervision of specialists in venereal diseases. The department of control "watches over" the morals of public resorts and the practice of surgery as relating to social disease. The department of healing distributes medicines to hospitals and clinics, maintains a manufacturing laboratory, and makes available information on medical progress in the diagnosis and treatment of venereal and other diseases. There is a social hygiene brigade for each of the five zones in which the republic is divided. They have clinics and hospitals for venereal patients and others, and brigade reformatories to render hospital service to those who have refused treatment in compliance with the law.

FOREIGN

Madame Curie Honored.—Madam Curie arrived in Warsaw, her native city, June 3, to lay the cornerstone of the radium institute and hospital to be erected as a monument to her.

Red Cross Funds for Japanese Hospital.—Doai Hospital, to be built in Honjo, Tokyo, with the 6,000,000 yen contributed in 1923 by the American Red Cross to relieve victims of the earthquake, the construction of which will start shortly, will be a four story structure of reinforced concrete and have a capacity to treat about 600 patients a day. The hospital will be principally for free patients and will be in charge of Dr. K. Miura.

Annual Award of Medal.—The directors of the *Medical Journal of South Africa* awarded the Hamilton Gold Medal for the best paper published in that journal in the last calendar year to Dr. R. A. Ross, for his paper on "Surgical Infections of the Hand." The Maynard prizes, also awarded by the directors of this journal for the best essay on selected subjects, have not been awarded this year. The board considered that no work of outstanding merit had been submitted.

Spain Admits Only Class A Graduates.—The regulations of the board of examiners of Spain require of foreign physicians who desire to practice medicine in that country that their education be equal to that provided in Spanish universities. From the United States, only graduates of Class A medical schools are admitted; from four to six months is required to determine whether the candidate may take the examination, and from three to twelve months to complete the examination. The fee is from $289 to $386.

Art Depicting the Wounded.—Less than half a dozen physicians contributed to the "Salon of the Wounded," recently opened at Paris, but large numbers of paintings, etchings and sculpture by lay artists, depicting the wounded, were collected. They form an exhibition which, a writer in the *Paris médical* says, should be kept open permanently during times of peace, the reverse of the temple of Janus. The exhibition is at Val-de-Grâce, the military medical school, and was ready for the recent International Congress on Military Medicine, at Paris.

First Lister Memorial Lecture.—Sir William Hunter Watson Cheyne delivered the first Lister Memorial Lecture at the Royal College of Surgeons, May 14. Sir William was an assistant to Lister in London. The Lister memorials, for which funds were raised some years ago, comprise a monument, unveiled in London in 1924, a medallion placed in Westminster Abbey, and the International Lister Memorial Fund for the Advancement of Surgery, of which the Royal College of Surgeons of England is trustee. A bronze medal is awarded every three years with a sum of £500 in recognition of noteworthy contributions to surgery. Sir William Hunter Watson Cheyne is the first recipient of the medal.

New Address of British Medical Journal.—The *British Medical Journal* has moved into the new headquarters of the British Medical Association in Bloomsbury. The postal address henceforth will be *British Medical Journal*, British Medical Association House, Tavistock Square, W. C. 1, London, and the telegraphic address, "Aitiology Westcent, London." The ornamental wrought iron gates, designed by Sir Edwin Lutyens, will complete the main quadrangle at the new headquarters and also be a memorial to members of the association who lost their lives in the World War. The dedicatory tablet over the central gate bears the inscriptions: "Memory and Praise" and "Faithful has been your warfare." The *British Medical Journal* notes that the traditional craft of wrought iron work practiced in England in the eighteenth century is almost a lost craft. It is expected that the ceremonies of opening the new headquarters, including the dedication of the memorial gates, will be in the week beginning July 13.

Safeguarding Induced Abortion.—The *Münchener medizinische Wochenschrift* gives the details of the resolution adopted by the Darmstadt Aerztlicher Kreisverein in regard to induced abortions. It states that the indications for the abortion must be accepted by three independent physicians, none of whom is related to the others or to the pregnant woman. Before the intervention, the reasons for the decision must be written out and signed by the three physicians, and the written consent must be appended of both husband and wife or, if unmarried, of the pregnant woman alone; if a minor, of her legal guardian. These documents are to be placed in an envelop, sealed, and signed with the names of the three physicians, the name of the attending physician being underscored, and the name of the place, the date and the nature of the invention are to be given. This envelop must be delivered to the president of the Kreisverein by the attending physician within three days. The society is to deposit the envelop in its archives and keep it for ten years, and then destroy it unopened. If a physician has inadvertently interrupted a pregnancy, he must make a written report of the occurrence to the president of the Kreisverein, giving the patient's name in a sealed envelop. Any infringement of these regulations entails an appeal to the professional tribunal of honor.

CORRECTIONS

El Paso Instead of Houston.—Dr. Herbert F. Sterzing is general superintendent of the City-County Hospital System at El Paso instead of Houston (The Journal, June 20, p. 1928).

Appointment of Dr. Drake.—The appointment of Dr. C. St. Clair Drake, Chicago (The Journal, June 13, p. 1845), should have read acting field director of the Committee on Municipal Health Department Practice of the American Public Health Association.

Government Services

Navy Hospital Enlarged

The U. S. Naval Hospital, Mare Island, has under construction a general ward building, a contagious ward building and a building for officer patients. When completed, the hospital will accommodate 350 patients.

Qualified Flight Surgeons and Examiners

The School of Aviation Medicine of the Army, Mitchel Field, N. Y., had a special session for Reserve and National Guard officers from May 1 to June 15. The following officers took the advanced course and have been qualified as flight surgeons:

Lieut. Col. Serge Androp, Med Res, Gallipolis, Ohio.
Major Harry N. Anderson, M. R. C., Woodbine, Iowa.
Major Grambow Thomsen-von Colditz, M. R. C., Evanston, Ill.
First Lieut. Albert J. Herbolsheimer, M. R. C., Minneapolis.
Capt. Elmer E. Langley, Washington N. G., Spokane, Wash.

The following officers took the preliminary course and have been qualified to perform the physical examination for flying:

Major William D. Petit, M. R. C., Thorndale, Texas.
Major Irwin E. Ruhl, M. R. C., Kansas City, Mo.
Major Lewis W. Fetzer, M. R. C., Dallas, Texas.
Major Alexander W. Burke, M. R. C., Chicago.
Major Archie McCallister, M. R. C., Oteen, N. C.
Major Victor W. Maxwell, M. R. C., Sanatorium, Miss.
Capt. Albert J. Pullen, M. R. C., Fond du Lac, Wis.
Capt. Louis G. Pawelek, M. C., Texas N. G., Houston, Texas.
Capt. Wilbur F. Smith, M. C., Indiana N. G., Indianapolis.

Sixty Vacancies in Army Medical Corps

An examination for appointment of first lieutenants in the Medical Corps of the Regular Army will be conducted at military stations throughout the United States, Sept. 14-18, 1925. There are sixty vacancies in the Medical Corps of the Army. The entrance annual pay of first lieutenants of the Medical Corps is $3,152 when he has dependents and $2,696 when he has no dependents. Applicants must be male citizens of the United States, between 23 and 32 years of age at the time of commission, graduates of an acceptable medical school, must have completed one year of clinical training in an accredited hospital since graduation, and must be physically fit for military service. Candidates otherwise eligible who have not completed the fifth or clinical year requirement may take this examination and if found qualified will be given appointments on completion of their clinical training. Successful candidates, after appointment, will pursue a course of instruction for about one year at the Army Medical School, Washington, D. C., and the Medical Field Service School, Carlisle Barracks, Pa. Applications for permission to appear before boards for examination can be obtained from the Adjutant General of the Army, Washington, D. C., or from the nearest military post or station.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 6, 1925.

The Inter-State Post-Graduate Assembly of America

The third visit of a large body of American physicians to this country has been made this week. In an interview, Dr. William B. Peck of Freeport, Ill., managing director of the assembly, expressed his appreciation of generosity and hospitality received.

INAUGURAL MEETING

The Duke of York presided at the inaugural meeting, which took place at Wigmore Hall, June 2; more than 500 members of the assembly and many leaders of the British profession were present. The duke extended a cordial welcome to our guests.

Mr. Neville Chamberlain, minister of health, welcomed the guests on behalf of the government. It was gratifying to this small island to be able to open its arms at once to representatives of every state in the American Union and every city in Canada. The benefits of the visit would not be all on one side, for our physicians would learn from contact with their guests.

Sir Humphry Rolleston, president of the Royal College of Physicians, extended the warmest welcome to our overseas colleagues. Such meetings increased sympathy as well as promoted knowledge. Physicians were students all their days and were most anxious to learn how they could best keep up with the ever advancing tide of knowledge. Postgraduate education was a very urgent problem in London, and much could be learned from the American visitors. How that "beloved physician," Sir William Osler, would have welcomed such a meeting.

Sir John Bland-Sutton, president of the Royal College of Surgeons, said that it was one thing to read about a surgeon in his effusions in medical journals and other legitimate forms of advertisement, but it was different to meet him face to face in his own wards or operating theater. This was the greatest invasion of American physicians that these islands had ever witnessed.

The American ambassador, Mr. A. B. Houghton, said that the comradeship of the British and American professions, so manifest in the agony of war, was now happily to be perpetuated by the comradeship of peace. Addressing a "gentle admonition" to his countrymen, he said that it would require all the talent and knowledge of their profession to weather the burst of British hospitality which awaited them. Nowhere else would they find a hospitality so generous, so gracious, so altogether delightful.

Dr. Charles H. Mayo, president of the clinics, expressed the great pleasure that it gave the members of the assembly to have a royal welcome seconded by many able representatives of England. Such a welcome would be recorded in all the states and provinces of North America; it would add to the warmth of feeling for the mother country, and would bring together more closely the English-speaking peoples. In concluding, he admitted the Duke of York an honorary member of the assembly.

The medical program in London occupied three days. In the mornings, short lectures were given at Wigmore Hall by the leading London physicians and surgeons, and in the afternoons the American physicians divided themselves into parties of twenty or thirty to visit thirty-four London hospitals, where lectures, clinics and operations had been arranged for their benefit and tea was served. The arrangements were excellent. The difficulty arising from the fact that the hospitals are scattered over the vast metropolis was dealt with by providing a fleet of motor busses, which started every day at 1:30 from Cavendish Square, each bus placarded with the hospitals to which it plied.

GALLBLADDER DISEASE

The first of the morning lectures was delivered on gallbladder disease by Sir Humphry Rolleston. The two etiologic factors—the infective and the metabolic—in the formation of gallstones sometimes operate alone but more often together. As a prophylactic against gallstones, he advocated restriction of foods rich in cholesterol, such as yolk of eggs, brain, fats, butter, fried foods, goose, duck, sweetbread, liver, kidneys, beans and peas. Stagnation of bile in the gallbladder should be counteracted by frequent small meals, which caused corresponding evacuations of the gallbladder, and by exercise, especially such as entailed free excursions of the diaphragm. But medical treatment was not so radical, and not so satisfactory, as surgical removal of the calculi.

"NEW DISEASES FOR OLD"

Sir Thomas Horder pointed out that while certain old diseases tended to disappear or lose their virulence, new ones were taking their place. The fall in the incidence of diphtheria, typhoid, erysipelas, hydrophobia, anthrax and glanders—to name only a few—was doubtless a testimonial to public health work. Changes for the better in the habits of our people had probably brought about the decline of rickets, some forms of tuberculosis and chlorosis. Acute gout was much less frequent, though whether this was due to drinking less alcohol or to drinking different alcoholic beverages from our fathers was not clear. On the other hand, a series of disease processes had arrived, having in common a large element of functional disturbance—neurasthenia in all its forms; arterial hypertension, with arteriosclerosis in close attendance; functional heart affections, with myocardial defects as accompaniments or sequels; hyperthyroidism, and perhaps diabetes. There had been an increase in affections due to the less pathogenic members of the coliform and streptococcal groups of bacteria. In the coliform group we had watched the appearance of paratyphoid infections and a large increase of infections due to colon bacilli or lactose-fermenting members of the coliform group. Many of these infections were subacute or chronic. Infections of the urinary tract and of the gallbladder had become common. Similarly, there had been a large increase of affections due to the streptococcus group. The increase of bacterial endocarditis, nearly always subacute and associated with feebly pathogenic strains, was a notable example. Then there was the large group, conveniently termed "focal sepsis," chronic infections for the most part of the peridental membrane, tonsils, accessory nasal sinuses, and respiratory and digestive tracts. Most of these were due to the same saprophytic strains of streptococci. There was good reason to regard infection with these saprophytic strains as due to lowered tissue resistance. The influence of the nervous system on the response to bacterial infection had been too little regarded. We must concentrate more on raising the general resistance and especially the nerve tone, instead of directing our efforts so much to the bacteriologic problem. The response to specific inoculation in many subinfections was disappointing. Nor did chemotherapy offer any better hope. We should aim at raising the general resistance by nonspecific means—open air by day and night, sunlight, ample and good food, and general tonic measures. We ought to induce our patients to lead a simpler life.

INTESTINAL STASIS

Sir W. Arbuthnot Lane said that the universal overloading of the large bowel involved an attempt to control dilatation and elongation of the intestine, which resulted in the formation of bands. These contracted, gripped the bowel, rotated it on its long axis, and fastened it to the floor of the iliac fossa, interfering with the passage of material. This was followed by contamination of the dammed back nutrient material and innumerable morbid sequelae. In milder cases, lubrication of the canal by the free use of paraffin was sufficient. Suitable diet, kaolin and belladonna were useful adjuvants. In other cases the freeing of the anchored bowel by a simple operation restored mobility.

ADDISON'S ANEMIA AND COMBINED DEGENERATION OF THE CORD

Dr. A. F. Hurst said that 85 per cent. of the cases of pernicious anemia showed symptoms of combined degeneration of the cord. The two diseases were due to the same cause—an infection that began in the mouth. Both conditions were marked by absence of hydrochloric acid in the gastric juice. This achlorhydria was familial, which explained the familial occurrence of Addison's anemia. Treatment consisted in eradicating oral infection after preliminary vaccination to prevent absorption of a large dose of toxin. Then hydrochloric acid should be given in large doses.

THE COMBATING OF VENEREAL DISEASE IN ENGLAND

Col. L. W. Harrison said that it had been assumed that attendance at the *ad hoc* treatment centers would be less than at the hospitals, owing to the camouflage which the latter provided. This had not proved true, and it was evident that the people would go where they could get the most efficient treatment. During the last four years the treatment had reduced the new cases of syphilis from 42,000 in 1920 to 22,000 in 1924. But he would not join with the optimists in other countries, who predicted that in ten years syphilis would be extinct. He believed, however, that they would see results which would justify the expense of the venereal disease scheme. New infections of gonorrhea had also diminished from 40,284 cases in 1920 to 31,272 last year. Improvements were necessary to discover venereal diseases in women and to secure their treatment. Thanks to propaganda, the public was daily becoming more aware of the evil effects of venereal disease and of the importance of thorough treatment. The quality of the work in the treatment centers improved year by year, so that the percentage of cases rendered noninfective increased.

INFLUENZA AND THE HEART

Dr. Strickland Goodall referred to an analysis of a large number of cases of heart disease which he had seen in the last twenty years and which had convinced him that the causation of heart disease in this country was changing. Until a few years ago the only antecedent disease to which we paid any attention in this country was rheumatism, but he had been struck recently by the fact that in a large number of serious heart cases the only definite antecedent complaint was influenza. After a mild attack, the patient appeared to recover completely and then suffered from heart trouble. The influenza virus might attack any part of the heart, and might cause flutter, fibrillation or heart block.

THE SPEED OF LIFE AND DISEASE

Lord Dawson of Penn suggested that the medical profession would become an educational body, recognizing that psychologic culture was of equal importance with physical culture. With the growth of medical science, the diseases that attacked us from without were growing fewer, but their places were being taken by lesser infections. The microbes of the acute infections invaded in force but left us alone after recovery, whereas the microbes of the subacute infections shared our active lives, troubling us but little when we were fit and damaging us when we were unfit. For these subinfections public hygiene was of small avail: it was the condition of the host that mattered, and that condition was determined partly by the individual and partly by the exactions made on his life. A measure of struggle would make for health, but the difficulty of modern life lay in the overdose of struggling, which produced not strength but stress. Lord Dawson believed that society was adapting itself to the new conditions.

THE STATE AND MEDICAL RESEARCH IN GREAT BRITAIN

Sir Walter Fletcher said that the country had never lacked men of first-rate ability in research work, but their efforts had been crippled by lack of money. It was still insufficiently recognized that the great achievements of our scientists had been already dependent on ancient endowments or their own private means. In the recently founded Medical Research Council, the problem of government control had been solved by the establishment of a small body composed chiefly of independently appointed scientific men who spent the money as they thought fit. The government allowance had grown from $200,000 to $700,000, still a trifling sum, but supplemented by voluntary help, it had greatly increased the volume of research work. In the last twelve years, considerable progress had been made in linking the scientific work of Great Britain with that of America. This progress had been facilitated by the Rockefeller Foundation.

FUNCTIONAL NERVOUS DISTURBANCES IN CHILDREN

Dr. H. C. Cameron said that a common effect of excessive mothering was the development in the child of "negativism." He recommended that children who persistently refused food should not be pressed to eat but should be made to feel that every item in the meal was a concession yielded with reluctance by their parents. They would then quickly develop enormous appetites. Similarly, children addicted to thumb sucking or head banging should be peremptorily ordered to suck thumbs and to bang their heads.

THE DRUG ILLUSION

At luncheon given by the English-speaking Union to the assembly, Dr. Woods Hutchison spoke of ridding America of the drug illusion. The people were willing to subscribe to the dictum of Oliver Wendell Holmes that if 99 per cent. of all the drugs were thrown into the sea it would be a good thing for the human race but rather hard on the fishes. The physicians took their remedies now from good food, fresh air and bright sunshine. Health was being made contagious instead of disease. The most important factor in a common sense diet was plenty of meat. There was no evidence to support the old tradition that meat was bad for gout or the kidneys, or that it tended to harden the arteries. People who lived on meat, such as those of Canada, New Zealand and Australia, had the longest lives. Another excellent principle was for the physician to find out what the patient liked in the way of food and let him have it. People who lived on a diet mainly composed of cereals had just about the same resisting power to disease as cows and rabbits.

THE BANQUET

The concluding and most important social function was a banquet at the Guildhall given by the advisory committee of the assembly to 700 British guests. Dr. Charles H. Mayo presided. A telegram was read from the king thanking the assembly for its greetings and trusting that its stay in this country would be interesting and agreeable. The minister of health, Mr. Neville Chamberlain, proposed the health of the Inter-State Post-Graduate Assembly. Dr. C. H. Mayo, in reply, said that, whereas in 1850 the average age of man was 40 years, in 1875 it was 45, and now it had increased to 58. They were there to learn how to save a few of those twelve years that were still lacking to make the "three score years and ten." One of the most important things they were going to take back after their visit was the fact that England had a minister of health. While, with the enormous additions to the world's knowledge in scientific medicine, they needed specialists, they also had need for general practitioners, and if these did their full duty medicine would always stand high. As a result of their visit they would obtain advantages not only for themselves but also for the people of their country. They could not adequately express their thanks for the kindness shown to them.

For the great success of this memorable visit, thanks are due to the American and British organizers and to the unstinted cooperation of the whole of the medical teachers of London. But special acknowledgment is due to Dr. Wiliam B. Peck of Illinois, the managing director; Mr. Philip Franklin of London, the honorary organizer, and to Mr. W. Girling Ball of London, one of the honorary secretaries. The assembly has left London for Manchester, Leeds, Liverpool, Dublin, Glasgow, Edinburgh, Newcastle-on-Tyne, Belfast and Paris.

PARIS

(From Our Regular Correspondent)

June 9, 1925.

Centennial Celebration in Honor of Charcot

Last week Paris celebrated the hundredth anniversary of the birth of Jean Martin Charcot. Many nations were represented at the celebration. On the first day, two sessions, held at the Salpêtrière, were devoted to papers on amyotrophic lateral sclerosis The second day, the Société de neurologie held a special meeting in remembrance of its twenty-fifth anniversary, and Professor Guillain, the occupant of Charcot's professorial chair, delivered an excellent address. In the afternoon, ceremonies were held at the Academie de médecine, and the élite of the medical profession of France gathered to hear Prof. Pierre Marie's eulogy of Charcot. In the evening, the president of France presided at a meeting at the University of Paris. Before an audience of 3,000, Dr. Babinski spoke of the activities of his former teacher Charcot. Shorter addresses were given also by Professor Guillain, Professor Marinesco of Bucharest, Professor Roussy in behalf of the Société anatomique, Dr. Rist in behalf of the Société médicale des hôpitaux, Professor Calmette in behalf of the Pasteur Institute, Professor Lallemand in behalf of the Institut de France, of which Charcot was a member; Mr. Sinclair Tomson, president of the Royal Medical Society of London, and Mr. de Monzie, minister of public instruction. Babinski declared that Charcot was one of the greatest medical figures of the nineteenth century, since he combined the qualities of keen observation, patience and the capacity for hard work, without which genius has rarely an opportunity of manifesting itself. Being passionately interested in pathologic anatomy as well as clinical pathology, he succeeded, by means of intensive study in these two fields, in giving a description of disease-producing bacteria hitherto unknown, and the volume of creative work to his credit is immense.

Charcot's name is intimately associated with the Salpêtrière, where he served as intern in 1852, was appointed on the hospital staff in 1862; and remained until his death. This asylum, the largest in the world, offered him a marvelous field of study, and it was there that he performed the work that brought him so great renown. His doctoral thesis, published in 1853, on chronic rheumatism was epoch-making, for he showed that the presence of an excess of uric acid in the blood separates frankly gout from the various forms of articular rheumatism, and he established the relationship between "dry" arthritis and nodose rheumatism. His clinical lectures on the diseases of old age have a particular value, and he, together with Vulpian, was the first to report a case of ulceration of the tricuspid valve associated with typhoid, this study being the first of a series of publications that made ulcerative endocarditis more widely known. He was also the first to establish the symptoms and the pathogenesis of "intermittent claudication," resulting from arterial obliteration, of which he recognized the true nature by associating it with similar cases described eight years previously by Boulay and Goubaux in veterinary pathology. He was one of the first to make known in France exophthalmic goiter as described by Basedow in Germany and by Graves in England. He completed the description of aural vertigo, or Ménière's disease, and he conceived the idea of treating this affection with quinin sulphate, obtaining thereby satisfactory results. In 1872, he was appointed professor of pathologic anatomy at the Faculté de médecine of Paris, which position he held for a period of ten years, or until the chair was created for him at the Salpêtrière.

His enlightening lectures on diseases of the lungs, the liver, the biliary passages and the kidneys have remained famous. The stimulus that he gave to the study of pathologic anatomy at the end of the nineteenth century has been exceedingly fruitful, and the paths that he blazed will never be effaced. But it is mainly his works on neurology on which his undying fame will be based. Among these, I may mention his researches on softening of the brain, encephalitis and cerebral hemorrhage. He called attention, along with Bouchard, to the alterations of the smaller arteries of the brain which are the most frequent cause of cerebral hemorrhage. His work on the localization of diseases of the brain, which appeared in 1876, opened an important field. In numerous later publications he established the cortical regions injuries of which were followed by paralysis and descending degeneration. To the still controversial question of aphasia, he brought, in addition to general ideas, many facts critically established. His clinical studies on pure verbal blindness are, in this connection, especially interesting. His researches carried out, since 1862, in collaboration with Vulpian, on epileptoid trepidation of the foot, make him appear in the light of a veritable precursor. He discovered the signs by which the irregular and abortive forms of locomotor ataxia may be recognized. He emphasized the frequency of the laryngeal and gastric crises in tabes; these had been previously described, but he was the first to give a complete description of them. He discerned clearly the distinctive characters of arthropathies in tabes, which in England are designated as Charcot's disease. The term "Charcot's disease" is applied even more frequently to amyotrophic lateral sclerosis, the clinical and anatomic attributes of which have been brought out by his illuminating articles, the perfect accuracy of which has been confirmed by the neurologists of all lands. Charcot was among the first to recognize that infantile paralysis is associated with an alteration of the cells of the anterior columns of the spinal cord. He was the first, through his researches on pseudohypertrophic paralysis, to distinguish, in the group of progressive muscular atrophies, those that are of spinal origin and associated with myopathies. Finally, we may refer especially to his studies on reflex amyotrophy of articular origin, and to his important researches, together with Pierre Marie, on a form of familial progressive muscular atrophy, to which the term "Charcot-Marie atrophy" has been applied. Charcot and Vulpian detached and individualized multiple sclerosis, and made known the anatomic and clinical characters of that affection. Charcot determined the complex symptomatology and the anatomic substratum, and pointed out that the lesions affecting the continuity of the axis cylinders account for the absence of secondary degeneration of the spinal cord and for the fluctuations usually noted in this disease. At the same time, he showed in what respects multiple sclerosis differs from Parkinson's disease, with which it had been hitherto confounded.

After having devoted the greater part of his life to anatomoclinical researches, Charcot occupied himself in his later years more particularly with the so-called functional *affections*—neuroses, and neuropathic and psychopathic phenomena. He gave a noteworthy description of convulsive tics and pointed out the characters that distinguish them from Sydenham's and Huntington's chorea. His lectures on hysteria are widely known. Students, French and foreign physicians, men of letters, philosophers and all types of thinkers, attracted by the discussion of psychologic problems, thronged his lecture room. Since that time, the ideas of most neurologists with respect to many points pertaining to hysteria have changed. Nevertheless, the investigations of Charcot in this field were stimulative. He contributed to the establishment of the idea of hysteria in males. He gave an excellent description of certain forms of paralysis occurring mainly in brachial monoplegia, which he termed "hysterotraumatic." He pointed out how they could be distinguished from paralysis associated with alteration of the peripheral nerves, caused by a traumatism, and showed that paralysis presenting exactly the same characters could be produced by suggestion. Just at this time, many questions were being raised in regard to hypnotism, or the power over a hypnotized subject conferred by suggestion. By a series of skilfully conducted experiments, Charcot established beyond all doubt that even hypnotized subjects retain sufficient control over their actions to resist suggestions opposed to their moral principles, which demonstration helped to dissipate erroneous conceptions which might have had a baneful effect on the social order.

Charcot died suddenly, Aug. 16, 1893. During his lifetime, he was universally honored and enjoyed many special distinctions. Under his influence, Salpêtrière became a veritable mecca for neurology. In fact, one of the most important services that Charcot performed was the founding of a powerful school of neurology. His pupils on whom his mantle fell have made good use of the heritage, and it is to them that the modern French school of neurology owes its high rank.

BELGIUM

(From Our Regular Correspondent)

May 30, 1925.

A Medical Cruise

Bruxelles médical, the enterprising journal that projected the successful "journées médicales" now held annually in Brussels, is organizing a series of excursions for medical men. Short cruises to the northern countries of Africa have already been undertaken, and for September a cruise to the Orient with port calls in Egypt, Asia Minor and Greece has been announced.

Infant Mortality

The figures contained in a recently published report show a considerable decrease in infant mortality. Before the war, 15 per cent. of infants died before completing the first year of life, but now the mortality has been reduced to 10 per cent. The principal reasons for the decrease are: the decrease of the birth rate, the improvement in working conditions, the progress in public health service, and the spread of better ideas on child culture. The decrease has been steady, with two interruptions (1911 and 1921). In 1911 the rate rose to 16.65 and in 1921 to 11.53 per cent. as the result of epidemics of infantile diarrhea and enteritis during unusually hot summers. The percentage of infant mortality varies with the provinces. The Flemish provinces, especially the western part of Flanders, present the highest rates; but, on the other hand, it is these provinces that show the most marked improvement since the decrease set in, probably because the birth rate has diminished proportionately more than in the Walloon provinces.

Pulmonary Cavities

The Société belge d'études de la tuberculose is still studying the radiologic diagnosis of pulmonary lesions. Dr. Geeraerd has compared the clinical observations with the radiologic findings in fifty cases of pulmonary cavities. In seeking to reach a diagnosis by auscultation, based solely on classical signs, he found twenty-one cases, half of the cavities being unrecognizable. But when he took in secondary, nonclassical signs in twenty-four further cases, cavities were revealed. Roentgenograms and fluoroscopy proved inadequate in twenty-four cases. In three cases the cavities appeared intermittently, depending on whether they were empty or filled with pus. In six cases, however, roentgen rays permitted a positive diagnosis unsuspected by auscultation.

The Antivenereal Crusade

The Société belge de dermatologie is consulted every year by the minister of the interior and public health in regard to furnishing antisyphilitic remedies for the treatment of poor patients. Three phases of the question were studied by a joint committee: the remedies to be furnished, the serologic researches to be recommended, and modifications in the government's method of assisting. I have referred in previous letters to the organization in Belgium of gratuitous office treatment in venereal disease. This plan, to which the public health service has committed itself, has given such encouraging results that the government cannot change its present methods of intervention without running the risk of losing these benefits. The figures for syphilitic infection in 1924 are scarcely half as high as for 1923. Under these circumstances, all physicians should be permitted to prescribe gratuitously mercurials and iodids, products of the neoarsphenamin and sulpharsphenamin types, and salts of bismuth. Members of the Société belge de dermatosyphiligraphie, on the other hand, should be allowed the prescription of arsphenamins and other arsenicals, preparations of bismuth for intravenous use and, in general, any antisyphilitic product that they hold is worthy of trial, provided a written request for the remedy be made and a report on its use is furnished the government.

The second point considered by the report was the circular of the minister of the interior and public health, relative to the standardization of serologic methods in conformity with the resolutions of the conference of Copenhagen. This circular recommends that all laboratories connected with the public health service shall apply simultaneously the Bordet-Wassermann test and the Dreyer flocculation test, or the so-called sigma test, because expressed in sigma units. This ministerial communication gives no information in regard to the conclusions of the conference of Copenhagen nor on the details of the execution of these methods. The report states that, in principle, the choice of methods to be employed should be left, in the main, to the initiative of the laboratories applying them. The following points were, however, accepted in the report: 1. All efforts should be concentrated on the correct application of the Bordet-Wassermann test. 2. The Bordet antigen is one of the best that can be employed. 3. The Hecht test, with unheated serum, supplements the findings of the Wassermann test. 4. While it is true that the flocculation tests have a scientific interest, there is no adequate reason for demanding their general use. It would, however, be eminently desirable, if the government contemplates exercising a certain control over laboratory research, to supply a limited number of selected laboratories with the necessary equipment. 5. There is no justification for demanding the general use of these tests, for to put them in the hands of those with insufficient experience would result in conclusions being reached that could not be rigorously defended.

RIO DE JANEIRO

(From Our Regular Correspondent)

May 15, 1925.

Reform of Medical Teaching

April 7, the *Diario Official* published the new regulations for medical teaching. The curriculum is divided into three courses: 1. Fundamental course, including the first three years. 2. General course, fourth and fifth years. 3. Special application or extension course, sixth year. First year: physics, general and mineral chemistry, general biology and parasitology, human anatomy. Second year: human anatomy, organic and biologic chemistry, histology, physiology. Third year: physiology, microbiology, pharmacology, general pathology. Fourth year: elementary medical chemistry, medical pathology, pathology. Fifth year: clinical medicine, surgical pathology, clinical surgery, hygiene, legal medicine, therapeutics. Sixth year: obstetrics, clinical pediatrics and surgical pediatrics and orthopedics, clinical obstetrics and gynecology, clinical neurology and psychiatrics, clinical dermatology and syphilography, clinical otorhinolaryngology and ophthalmology, tropical medicine.

A new development is the chair of tropical medicine. Students, before presenting themselves for examination in this branch, must have been approved in all other subjects. In addition, there will be a special course in hygiene and public health for physicians intending to devote themselves to sanitary work. This subject will be given in the Oswaldo Cruz Institute, and will include the following matters: general epidemiology and prophylaxis; special prophylaxis services; applied biometry and statistics; food sanitation; elementary bromatology; rural and urban sanitation; prenatal hygiene; infant hygiene and school sanitation; industrial and professional hygiene; sanitary administration, and sanitary legislation.

One of the results of the changes is the creation of an institute of anatomy, which will be devoted to teaching anatomy, pathology and legal medicine, in addition to conducting general research work. This institute will have four departments: anatomy; histology and microscopic anatomy; pathologic anatomy, and legal medicine. The new institute of radiology and electrology will be attached to the Rio Janerio Medical School. The following subjects will be taught: roentgen-ray diagnosis and electrodiagnosis, roentgenotherapy, radium therapy, electrotherapy, mechanotherapy and phototherapy.

Inflammation of the Brain

Cases of cerebral inflammation associated with rheumatism are quite rare. While some authors compute at 2 per cent. the cases of acute polyarthritis in which brain involvement ensues, the percentage seems to be even lower, in view of the lack of case reports. On this account, Dr. Eduardo Monteiro, a clinican in São Paulo, has presented a full study of a case in a multipara, aged 25, with cardiac fatty necrosis. She had always been very liable to colds. Last August, she had an attack of influenza with tracheitis, which lasted five days; on the sixth day the fever disappeared. The patient got up on the seventh day, but at noon had an acute chill, and a temperature of 40.2 C. (104.4 F.). There was pain in the left leg. The next day there was pain and reddening in the metacarpophalangeal joints. A diagnosis of acute polyarthritis was made, and sodium salicylate prescribed. In the afternoon, a severe headache appeared. At 9 o'clock the patient was screaming, very soon developed coma, and died at 2 o'clock in the morning. The whole process lasted but little over forty-eight hours, and the brain inflammation about nine. Two hours before death, the blood urea showed 0.571 mg. per liter. Dr. Monteiro studies the different types of the disease, as superacute; acute; subacute or chronic cerebral inflammation with rheumatism, and rheumatism with insanity. In his opinion, in addition to the pancreatic and suprarenal concomitants of rheumatism, there is also the brain complication.

Streptococcus Mucosus Otitis

Dr. Mario Ottoni has reported to the São Paulo Medical and Surgical Society a case of otitis media complicated with mastoiditis in an infant, aged 2½ years. The course lasted three or four days, and there was no fever or pain. In the material from the mastoid, *Streptococcus mucosus* was found in pure culture. Dr. Ottoni pleads for bacteriologic examinations in all inflammations of the ear, and especially when the slow course suggests the presence of an encapsulated coccus.

BERLIN

(From Our Regular Correspondent)

May 30, 1925.

Congress of the German Society of Internal Medicine

STAPHYLOCOCCUS AND STREPTOCOCCUS AFFECTIONS IN INTERNAL MEDICINE

Professor Schottmüller of Hamburg dealt with staphylococcus and streptococcus affections. Staphylococci and streptococci of skin and mucous membranes do not cause disease until they are carried into the blood and lymph streams. In the blood the micro-organisms soon perish, so that their presence cannot be demonstrated with certainty unless there are five billions or more to the cubic centimeter. The type of fever is dependent on the number of bacteria present. The fever is caused by the endotoxins of the bacteria, possibly in combination with body substances. A single invasion of bacteria into the blood stream does not produce sepsis, which results only when a focus becomes a constant source of bacterial invasions into the blood stream. Staphylococcus sepsis is caused by white or yellow, hemolytic or anhemolytic staphylococci. Rarely the infection may originate in the mucous membranes, as in empyema following bronchitis and bronchopneumonia, or as with sepsis following cholecystitis or abscess of the liver. In staphylococcus sepsis there are always small abscesses present in the kidneys. Also abscesses of the prostate, meningitis and myelitis in the lumbar portion of the spinal cord occur. Invasion of a vein causes chills and fever. In endocarditis, which always takes an acute lethal course, the murmurs may be absent, but the demonstration of the bacteria in the blood will usually be successful. The streptococcus sepsis arises through the anaerobic *Streptococcus putrificus*, *S. viridans* or *S. pyogenes*. In addition to the type of organism, the localization helps to decide the prognosis. Infection with *S. putrificus* may originate in purulent abscesses of the tonsils, otitis media, appendicitis or septic abortion. The prognosis is bad in almost all such infections. For *S. pyogenes*, which is found frequently in scarlet fever, the tonsils are often only the portal of entry but not the septic focus. Tonsillectomy is then of no avail. Likewise, all too frequently teeth are extracted on the supposition that in them is the septic focus. If small remnants of micro-organisms remain in the tissues, they may cause a chronic sepsis, in which vaccinotherapy is useful. Even though nephritis is not present, bacteria are excreted in the urine. Pneumonia with purulent clumps of bloody sputum awakens a suspicion of streptococcus sepsis. A third of the cases of puerperal fever are caused by *S. pyogenes*. Or it may cause a violent and lethal endocarditis, petechiae in the skin and evanescent periarticular symptoms. *S. viridans* causes in the meninges and the heart valves fatal infections; in the respiratory tract purulent catarrh, and in the biliary passages chronic inflammation (cholangeitis lenta), which heals following operation. Endocarditis lenta is commonly superimposed on an old heart valve defect. Anemia and low-grade fever appear after a long period of incubation. Prophylactic vaccination is of no avail.

Professor Dietrich of Cologne discussed the ability of the body to react to septic affections. The mechanical transference of bacteria from the septic focus to the blood stream and tissues does not constitute the immediate cause of the organic changes but the reaction of the human organism to the hematogenous action of the disease germs. This reaction takes place mainly in the cells of the vascular connective tissue. The virulence of the disease germs together with the reaction of the body determine the course of the infection, so that either a successful defense is established and an accentuation of the reactive capacity of the tissues is set up or an unretarded destruction of the tissues occurs. Resorption may cause a stagnation of the germs, so that the site of resorption may become the seat of the disease. Also endocarditis, mycotic aneurysms and periarteritis nodosa are similar localizations of the infection. Still less favorable than the failure to react is the complete exhaustion of the resorbent tissues in certain chronic affections, such as amyloidosis and cirrhosis of the liver.

Death of Hugo Liepmann

Hugo Liepmann, for many years professor of psychiatry and neurology in Berlin, died, the fore part of May, at the age of 62.

After specializing in philosophy for a time, he switched over to medicine. At the beginning of his medical career, he became an assistant of Jolly in Berlin, and later of Karl Wernicke in Breslau. In 1899, he accepted the post of assistant physician in the municipal psychopathic hospital at Dalldorf. In 1914, he was appointed the director of the psychopathic hospital at Herzberge. Owing to some unpleasantness, for which he was in no wise responsible, he withdrew from that institution in 1917. As none of the German universities had a vacant chair for this excellent psychiatrist and brain investigator, he withdrew to private life, although continuing his research work. He was, however, granted the title of ordinary professor. For a number of years, symptoms of paralysis agitans had been appearing, and when he saw (for he was fully conscious of the import of his malady) that his mental powers were also beginning to fail, he resorted to poison to end his life.

Liepmann's work in the field of medicine took two directions: He made a special study of the destruction of acquired motor and sensory associations—the processes designated as apraxia, asymbolia, agnosia and auditory amnesia—and their localization in the brain; and he investigated certain symptoms of psychic disturbance by the application of the more refined psychologic methods, in order to ascertain their mode of origin and their import. Not only the first of his articles, which dealt with the production of visions, in persons delirious from alcohol, by pressure on the eyeball (1894), but all the following essays were distinguished by the broad range of view, the precision of the researches, the keen interpretation and the clearness of the presentation. His conceptions of the mode of origin of apraxia, which he confirmed by studies on the cadaver, led him to the theory of the dominance of the left half of the brain, which, under certain circumstances, might become disastrous for the individual and which one should endeavor to counteract by ambidextrous training. He erected approaches to other fields of clinical psychiatry by his articles on echolalia (1900) and on disturbances of conduct in mental patients (1905). His articles on flight of ideas (1903-1904), in which he set up a disturbance of the power of attention as the essential basis of hallucination, and his essays on the determination of psychopathic constitutions, are also worthy of note.

Death of Hermann Kossel

Prof. Hermann Kossel, director of the Hygienic Institute in Heidelberg and brother of the physiologist Albert Kossel of the same university, succumbed, the end of April, to an attack of cardiac paralysis, at the age of 61.

In 1891, Kossel became an assistant in the Berlin institute for infectious diseases. He was at that time greatly influenced by Behring's discovery of serotherapy, and he performed meritorious service in testing its efficacy in diphtheria. Further researches of Kossel on the formation of toxins by diphtheria bacilli led to the important finding that the toxin is exogenous and that the dead, washed bacilli contain very little of it. The young investigator, together with R. Pfeiffer, was chosen to accompany the expedition that Robert Koch undertook in 1898 to study malaria in Italy. Kossel's further researches on malaria had to do mainly with avian malaria (*Halteridium*), in which connection he discovered a reliable method of demonstrating the fecundation process in the sexual forms of parasites. In 1899, he was assigned a post in the imperial public health service, and soon afterward was appointed, together with A. Weber, to head a commission to study in Finland hemoglobinuria in cattle. The observations made in Finland contributed to the discovery that the disease is transmitted by ticks. The same year, Kossel and Frosch were sent by the government to Portugal to study the plague, an epidemic of which had broken out in Oporto. Later, in collaboration with Weber and others, he sharply delineated the differences between the human and the bovine type of tubercle bacillus. He demonstrated the constancy of these types and proved that the bovine tubercle bacillus is of exceedingly rare occurrence in pulmonary tuberculosis in man. In 1904, Kossel was called to the University of Giessen to assume the chair of hygiene as the successor of Gaffky. In 1910, he accepted an invitation to become the director of the Hygienic Institute connected with the University of Heidelberg, where he remained until his death.

Marriages

Duma Carroll Arnold, Roebling, N. J., to Dr. Ann Whelan of Philadelphia, at New York, May 16.

Henry Hunton Hampton, Chattanooga, Tenn., to Miss Dorothy Detrick of Caldwell, Kan., June 2.

Allen A. Berlin, Newfoundland, Pa., to Miss Mary Elizabeth Lance, of Scranton, Pa., May 23.

Robert Julian Estill, Lexington, Ky., to Mrs. Elizabeth Hinton of Cincinnati, June 6.

Jack C. Hutton, Abilene, Kan., to Miss Margretta Lea of Ashley, Ohio, June 11.

Euclid Borland Gill to Miss Mary Munholland, both of New Orleans, recently.

William Addison Jacques to Miss Edna Jenkins, both of Ashland, Pa., June 24.

Ralph H. Creighton to Miss Dorothy Gilman, both of Minneapolis, in May.

William Brady Sharkey to Miss Oma Hartsock, both of Clinton, Ill., June 3.

Jacob Buckstein to Miss Estelle Schwartz, both of Brooklyn, June 18.

Deaths

Henry Arnold Fairbairn ⊕ Brooklyn; University of Virginia Department of Medicine, Charlottesville, 1877; Medical Department of Columbia College, New York, 1878; member of the American College of Physicians; past president of the Medical Society of Kings County; on the staffs of the Brooklyn, St. John's, Long Island College, Bushwick and Swedish hospitals; aged 70; died, June 12.

L. Hulbert Milligan, Morristown, Tenn.; University of Maryland School of Medicine, Baltimore, 1890; member of the Tennessee State Medical Association; past president of the Hamblen County Medical Society; for several years member of the county school board; served in the M. C., U. S. Army, during the World War; aged 60; died, May 22, of chronic nephritis.

Halbert Severin Steensland, Syracuse, N. Y.; Johns Hopkins University Medical Department, Baltimore, 1899; emeritus professor of pathology and formerly director of the pathologic laboratory, Syracuse University College of Medicine; at one time on the staffs of St. Joseph's Hospital and the Hospital of the Good Shepherd; aged 52; died suddenly, May 30.

Earl A. Stone, Los Angeles; University of California Medical School, San Francisco, 1903; formerly demonstrator of anatomy, Oakland College of Medicine and Surgery; at one time on the staff of the Alameda County Receiving Hospital, Oakland; also a druggist; aged 47; died, June 6, of potassium cyanide poisoning.

Virginius Williams Harrison ⊕ Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1887; associate professor of obstetrics, Medical College of Virginia; formerly professor of materia medica and therapeutics, University College of Medicine; aged 60; died in June.

John Ferguson Black, Halifax, Nova Scotia, Canada; Medical Department of Columbia College, New York, 1868; formerly demonstrator of anatomy, Halifax Medical College; at one time on the staff of the Victoria General Hospital; died, March 24, at Stone, Somersetshire, England.

Robert Emmet Coughlin, Brooklyn; Medical Department of the University of the City of New York, 1892; member Medical Society of the State of New York and the Brooklyn Society of Internal Medicine; aged 57; died, June 8, at the Norwegian Hospital, following an appendectomy.

Hamilton Bernard Lowry, Lincoln, Neb.; Cincinnati College of Medicine and Surgery, 1876; member of the Nebraska State Medical Association; formerly professor of nervous diseases, Nebraska College of Medicine; aged 75; died, May 21, of heart disease and chronic nephritis.

George H. Ripley ⊕ Kenosha, Wis.; Hahnemann Medical College and Hospital, Chicago, 1891; past president of the Kenosha County Medical Society; member and at one time president of the Wisconsin State Board of Medical Examiners; aged 64; died, June 13, of heart disease.

Alice Bennett ⊕ New York; Woman's Medical College of Pennsylvania, Philadelphia, 1876; member of the Philadelphia Neurological Society; for fifteen years on the staff of the New York Infirmary for Women and Children, where she died, May 31, of angina pectoris, aged 74.

Claude Adelbert Freligh, Easton, Pa.; University of Vermont College of Medicine, Burlington, 1899; member of the Medical Society of the State of Pennsylvania, and the American Academy of Ophthalmology and Oto-Laryngology; aged 62; died, June 7, of bronchopneumonia.

Elbert Osborne Day, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the Medical Society of the State of Pennsylvania; on the staff of the Germantown Hospital, where he died, June 13, of septicemia, aged 39.

Edward E. Bryson, Pittsburg, Texas; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1891; member of the State Medical Association of Texas; aged 66; died, May 31, at a sanatorium in Dallas.

Francis A. Pender, Verona, N. J.; Georgetown University School of Medicine, Washington, D. C., 1917; associated with the U. S. Veterans' Bureau, Newark; on the staff of the Essex Mountain Sanatorium, where he died, April 28, aged 41.

⊕ Indicates "Fellow" of the American Medical Association.

Benjamin E. Gore, Bardstown, Ky.; University of Louisville School of Medicine, 1883; member of the Kentucky State Medical Association; past president of the Nelson County Medical Society; aged 68; died, May 31, of heart disease.

William Christopher Rife, Villa Ridge, Ill.; Vanderbilt University School of Medicine, Nashville, 1894; member of the Illinois State Medical Society; aged 54; died, June 11, at St. Mary's Infirmary, Cairo, following a long illness.

Charles Edward Williamson, Brooklyn; Long Island College Hospital, Brooklyn, 1896; member of the Medical Society of the State of New York; formerly on the staff of the Bushwick Hospital; aged 52; died, June 14.

John Henry Harris, Franklinton, N. C.; Bellevue Hospital Medical College, New York, 1886; member of the Medical Society of the State of North Carolina; aged 61; died, June 13, at the Sarah Leigh Hospital, Norfolk, Va.

Edward Kinne ⊕ Elkhorn, Wis.; University of Virginia Department of Medicine, Charlottesville, 1896; formerly on the staff of the Walworth County Insane Hospital; aged 68; died suddenly, June 10, of heart disease.

Elisha Wilton Brown, Albany, N. Y.; New York Homeopathic Medical College and Hospital, 1894; on the staff of the Memorial Hospital; aged 54; died, June 5, at Addison Bridge, Maine, following an operation.

Andrew S. Ellett, Christiansburg, Va.; University of the South Medical Department, Sewanee, 1901; member of the Medical Society of Virginia; aged 45; died, June 3, of heart disease, following an appendectomy.

Walter Perkins Hutchinson, Abington, Mass.; Medical School of Harvard University, Boston, 1901; member of the Massachusetts Medical Society; member of the board of education; aged 58; died, May 14.

Frederick D. Haldeman, Berkeley, Calif.; University of Nebraska College of Medicine, Omaha, 1882; aged 66; died, June 11, at the University of California Hospital, San Francisco, of skull fracture.

Robert Sylvester Morris, New York; Medical Department of Columbia College, New York, 1877; member of the Medical Society of the State of New York; aged 71; died, June 17, of heart disease.

Lawrence Francis Fluehr, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1924; intern, Misericordia Hospital; aged 26; was drowned, June 14, while canoeing.

James R. Phillips, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1893; member of the Medical Society of the State of Pennsylvania; aged 58; died, June 8.

Caleb W. Presnall ⊕ Denver; University of Louisville (Ky.) School of Medicine, 1905; served in the M. C., U. S. Army, during the World War; aged 49; died in May, at Pueblo, Colo.

Senter Lee Gettys ⊕ St. Louis; Missouri Medical College, St. Louis, 1895; served in the M. C., U. S. Army, during the World War; aged 50; died at St. Luke's Hospital, June 6, of nephritis.

Richard Thomas Hardy, Baltimore; College of Physicians and Surgeons, Baltimore, 1893; formerly superintendent of the Sydenham Hospital; aged 70; died, June 6, of heart disease.

George N. McLoughlin ⊕ Seattle; George Washington University Medical School, Washington, D. C., 1895; city health commissioner; aged 57; died, June 3, following a long illness.

William Frederick Baker ⊕ Wausau, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1904; aged 46; died, June 4, at the Wausau Memorial Hospital, of typhoid fever.

Richard Joseph Thompson, Fall River, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1882; formerly on the staff of the Union Hospital; aged 68; died in June.

Moris Lawrence Naughton, London, Ohio; Ohio State University College of Medicine, Columbus, 1914; member of the Ohio State Medical Association; aged 35; died, May 22.

Oscar Henry Coumbe, Washington, D. C.; National University Medical Department, Washington, 1891; member of the Medical Society of Virginia; aged 66; died, June 12.

B. Frank Landis, Tiskilwa, Ill.; Jefferson Medical College of Philadelphia, 1877; member of the Illinois State Medical Society; aged 74; died in June, of heart disease.

William Andrew Eiland, Samson, Ala.; Southern Medical College, Atlanta, 1881; member of the Medical Association of the State of Alabama; aged 66; died, May 30.

Stuart Ommanuey Hector, Rahway, N. J.; Bellevue Hospital Medical College, New York, 1879; aged 70; died, recently, at a local hospital of diabetes mellitus.

Maurice Uran, New York; University and Bellevue Hospital Medical College, New York, 1902; aged 48; died, May 28, at Bremerhaven, Germany, of heart disease.

Eugene Thomas Galligan, Boston; Medical School of Harvard University, Boston, 1882; member of the Massachusetts Medical Society; aged 69; died, June 4.

Willard Nelson Simmons ⊕ Niantic, Conn.; University of Vermont College of Medicine, Burlington, 1889; aged 65; died, June 5, following a long illness.

William Grabill Binkley, Washington Boro, Pa.; University of Michigan Medical School, Ann Arbor, 1869; Civil War veteran; aged 81; died, June 2.

Frank Gilbert Stroud ⊕ Moorestown, N. J., Jefferson Medical College of Philadelphia, 1885; formerly health officer of Moorestown; aged 63; died, June 6.

Daniel Campbell, Canfield, Ohio; Western Reserve University School of Medicine, Cleveland, 1881; aged 74; died, May 22, of cerebral hemorrhage.

James Polk Wallace, Albany, Ore.; University of Tennessee College of Medicine, Memphis, 1880; formerly mayor of Albany; aged 72; died, June 4.

Seymour M. Cornell, Bronson, Mich.; Bennett College of Eclectic Medicine and Surgery, 1890; aged 56; died, June 6, of cerebral hemorrhage.

William B. Moore, Brownsville, Tenn.; University of Nashville Medical Department, 1866; Civil War veteran; aged 89; died, June 10.

Charles Simmons Foster, Chester, S. C.; Meharry Medical College, Nashville, 1919; aged 33; died, May 21, of acute dilatation of the heart.

Ralph Case Spence ⊕ Dallas, Texas; Medical School of Harvard University, Boston, 1918; aged 31; died, June 8, at the Baylor Hospital.

George Miller Aylesworth, Collingwood, Ont., Canada; Victoria University Medical Department, Toronto, 1869; died recently, at Trenton.

Lewis W. Knapp, Grosse Point, Mich.; Detroit College of Medicine, 1896; aged 53; died recently, of chronic parenchymatous nephritis.

Samuel Francis Jackson, New York; Yale University School of Medicine, New Haven, 1907; aged 41; died, June 10, of heart disease.

William H. Friedman ⊕ New York; St. Louis College of Physicians and Surgeons, 1902; aged 50; died, June 9, of angina pectoris.

James J. Holden, Williamsburg, Ohio; Physio-Medical Institute, Cincinnati, 1875; mayor of Williamsburg; aged 72; died, June 3.

Archibald Cuning Livingstone, Pensacola, Fla; Chicago Homeopathic Medical College, 1899; aged 49; died, June 6, at Tampa.

Edmund Strudwick Ashe, Wadesboro, N. C.; College of Physicians and Surgeons, Baltimore, 1885; aged 67; died, May 24.

Ralph Oliver Hollister, Hammond, La.; University of Michigan Medical School, Ann Arbor, 1891; aged 62; died, June 7.

George C. Babcock, Lafayette, La.; Medical Department University of Louisiana, New Orleans, 1881; died recently.

Azmon G. Blankenship ⊕ Rye, Ark.; Kansas City College of Medicine and Surgery, 1916; aged 37; died, May 1.

Marion P. Winkler, Tchula, Miss.; Memphis (Tenn.) Hospital Medical College, 1882; aged 55; died, May 17.

Homer C. Noble, Sanford, Fla.; Cincinnati College of Medicine and Surgery, 1875; aged 73; died, May 22.

Rolland D. Earley, Hancock, Wis. (registered, Wisconsin, under the Act of 1900); aged 67; died in June.

A. J. Weeks, Sioux City, Iowa (licensed, Iowa, 1886); Civil War veteran; aged 79; died recently.

George Dwight Brannon, Crown Point, Ind.; Chicago Medical College, 1886; aged 64; died, June 7.

William Henry Smith, Shellrock, Iowa; Chicago Medical College, 1878; aged 74; died recently.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

LISTERINE

Physicians not infrequently ask if Listerine is an objectionable preparation to be used as a simple mouth wash. The answer is that so far as the composition of Listerine is concerned, the product used for such a purpose is unobjectionable. Unfortunately, the manufacturers are not content to recommend it and advise it exclusively for the field in which it has a place.

Some years ago, Torald Sollmann, dealing with "The Broader Aims of the Council on Pharmacy and Chemistry," contributed one article under the title "Some Studies in Bottled Psychotherapy." In this article Sollmann appraised the efficiency of Listerine thus:

> "What a fine antiseptic odor and taste are possessed by thymol! After comparing the odor and taste of a saturated solution of thymol with a 5 per cent. solution of phenol, or a 1 per cent. solution of corrosive sublimate, could one doubt for a moment which is the most active? Evidently not, for thymol, plus small quantities of boric and benzoic acid, under the name of Listerine, sells at a dollar a bottle. It is really too bad that bacteria cannot recognize a superior antiseptic as well as the nose—for, according to the bacteriologic test, as quoted by Wood, four hundred and ninety-five dollars' worth of Listerine has the antiseptic action of a cent's worth of corrosive sublimate; or fifteen dollars' worth of Listerine equals a cent's worth of carbolic acid."

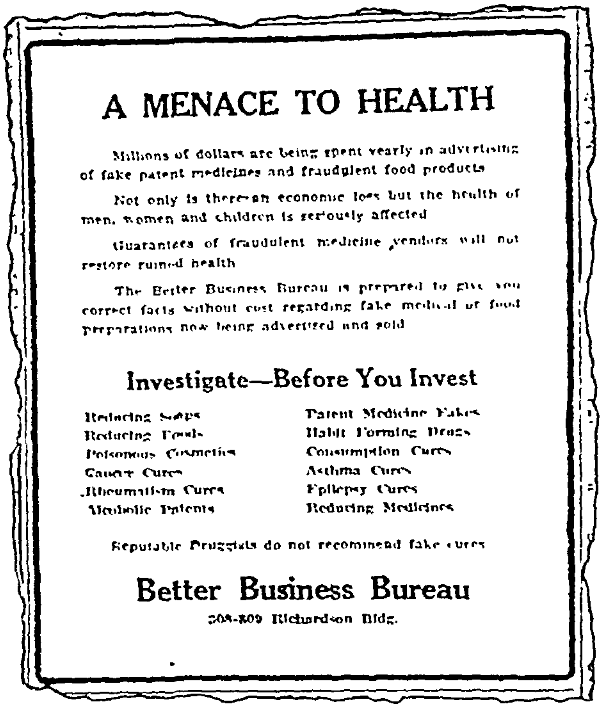
While the preparation was formerly advertised to the medical profession with unwarranted and absurd claims, now that medical endorsements have popularized it with the public, it is exploited with an air of conservatism; even a statement of composition is given. The following "formula" appears on trade packages:

> "Constituents: — Thyme, eucalyptus, baptisia, gaultheria and mentha, of each one part; boric and benzoic acids, twenty-nine parts; ethyl alcohol, two hundred and fifty parts; water to make one thousand parts."

The formula is essentially meaningless, for the product obviously does not contain "thyme, eucalyptus, baptisia, gaultheria and mentha," though it may contain some preparation of these drugs. The term "mentha" leaves one in doubt whether peppermint, spearmint or some other member of the mint family is represented. The statement that one thousand parts contain "boric and benzoic acids twenty-nine parts" fails to state the amount of each of these two alleged ingredients.

While the claims as to the antiseptic efficiency and the claim that it is a deodorant (it is not a deodorant, but merely covers one smell with another) may in general do little harm when Listerine is used as a "toilet preparation," the advertising that accompanies trade packages contains recommendations for its use in serious conditions, the self-treatment of which is a danger to the individual and inimical to the public health. The potency for harm which these recommendations have is all the greater because the manufacturers assert that they "do not advocate self-medication even with Listerine." The trade package circular recommends the use of Listerine in "tonsilitis"; this may easily lead to its employment in undiagnosed cases of diphtheria, and dependence on it in such a condition may be the means of spreading this infectious disease. The circular suggests its use in "bronchitis"—which may be tuberculosis or pneumonia. It recommends its use in "leucorrhea"; this may lead to the self-treatment of a serious infection. The self-treatment of any such conditions is fraught with danger to the individual and the community.

Incidentally, the advertising that goes with Listerine packages also advertises "Lithiated Hydrangea" and thus may lead the laity to purchase this nostrum at department store drug counters.



A MENACE TO HEALTH

Millions of dollars are being spent yearly in advertising of fake patent medicines and fraudulent food products

Not only is there an economic loss but the health of men, women and children is seriously affected

Guarantees of fraudulent medicine vendors will not restore ruined health

The Better Business Bureau is prepared to give you correct facts without cost regarding fake medical or food preparations now being advertised and sold

Investigate—Before You Invest

Reducing Soaps
Reducing Foods
Poisonous Cosmetics
Cancer Cures
Rheumatism Cures
Alcoholic Patents
Patent Medicine Fakes
Habit Forming Drugs
Consumption Cures
Asthma Cures
Epilepsy Cures
Reducing Medicines

Reputable Druggists do not recommend fake cures

Better Business Bureau
208-209 Richardson Bldg.

The Associated Advertising Clubs of the World, a national organization doing splendid work in the cause of "truth in advertising," has local component groups, usually called "Better Business Bureaus." The Better Business Bureau of Toledo, Ohio, has a particularly aggressive manager, Mr. F. M. Willson, who, in common with some of the other Better Business Bureaus, keeps in close touch with the work of the Propaganda Department of The Journal. Above is reproduced an advertisement (reduced in size from the original) that was run by the Better Business Bureau of Toledo in the newspapers of that town. Read it carefully. It is encouraging in that a problem that has for years been left to the medical profession is now being tackled by the advertising men. Further cause for encouragement lies in the fact that newspapers of today will publish an advertisement of this kind. Twenty years ago the hold of fake "patent medicines" and fraudulent food products on the advertising departments of most newspapers would have resulted in the rejection of such an advertisement as that shown above.

Nibbling Away at the Practice of Medicine.—Much of the activity of social organizations and health and welfare departments does and should receive our hearty support; but with the tendency as it is today, we should be keenly alert that we are not caught napping. . . . All about us are welfare-health organizations nibbling away at the practice of medicine. The sad part is that this has come about in too many instances by the indifference or credulity of our profession or the cupidity of some of its members, and where such has been the case no criticism is valid except criticism of ourselves; but in many instances no need for such organizations exists, and the service is established for reasons of purely personal advantage.—Follansbee, George Edward: Annual Address of the President, Ohio State Medical Association, *Ohio State M. J.* **21**:411 (June) 1925.

Correspondence

"IVY POISONING"

To the Editor:—Referring to our paper on ivy poisoning (The Journal, June 27, 1925, p. 1996), one of the volunteers who received preventive treatment has recently reported to us with an extensive vesicular ivy dermatitis of the face, arms, hands and legs. It developed spontaneously. The particularly interesting feature of this outbreak was its severity at the places which had been experimentally inflamed six weeks previously. The circular inoculation site, and the garter-like band around the arm where the adhesive plaster had been applied were mapped out most sharply.

G. L. Krause, M.D.,
F. D. Weidman, M.D., Philadelphia.

THE ERYTHROPOIETIC ACTION OF GERMANIUM DIOXID

To the Editor:—In The Journal, June 6, Bailey, Davidson and Bunting make certain criticisms of the conclusions drawn by me and my associates from observations on the erythropoietic action of germanium dioxid in the rat. These workers object to our use of the rat on the ground that "the withdrawal of the amount of blood necessary for careful counts soon creates an anemic stimulus to the bone marrow which would tend to cloud the issue." In our paper (*J. Exper. Med.* **35:**173 [Feb.] 1922), tables are given which definitely show that the control *untreated* rats did not exhibit any increase in the erythrocyte count of the blood as drawn by our technic which was in any way statistically valid or comparable to that found to occur in the rats receiving germanium dioxid. If we had not had these untreated controls for comparison, the criticism of Bailey, Davidson and Bunting might have been well taken. But since we did have controls to which no germanium was given, and which were litter mates, kept under exactly similar conditions of diet and environment, and from which the blood for examination was taken in exactly the same way as from the germanium dioxid treated rats, the criticism made of this phase of the study is beside the point.

With regard to the question of the toxicity of the compound, it should be noted that we were studying the *relative* toxicity of germanium and arsenic. Our conclusion was: Germanium dioxid "can be administered subcutaneously in doses up to 180 mg. per kilogram of body weight of the experimental animal, without apparent harmful effects. . . . It is therefore evident that germanium does not possess the toxicity for the living organism which is exhibited by arsenic" (*J. Pharmacol. & Exper. Therap.* **19:**331 [May] 1922). In our third paper we reported certain changes in the liver and spleen, *J. Exper. Med.* **35:**507 [April] 1922). These may be interpreted by some as evidence of toxicity.

Now Bailey, Davidson and Bunting admit errors of diet and of dosage in their experiments. In addition, they failed to provide litter mates, of common dietary and environmental history for untreated controls, from which organs could be removed for examination in comparison with the test groups at the end of the experiments. This is a fatal defect in any experimental work, as any investigator working with laboratory animals susceptible to infectious lesions and alterations due to differences in diet and environment well knows. It should not be necessary to point out the absolute need for strict control in these matters.

Finally, we used in our experiments a germanium dioxid that was pure for atomic weight determinations made by Müller and was arsenic free. Later material obtained from the New Jersey Zinc Company, used to confirm the earlier findings, was purified by twice distilling in chlorin, and was then arsenic free. This we believed and still believe essential procedure, since it takes only 8 mg. of arsenic per kilogram of body weight to kill a mature albino rat. Much less would easily produce the lesions noted by our critics. We have no reason to retract our conclusions and invite an impersonal comparison of our methods of control, procedure and the results obtained thereby, with those of other workers.

Frederick S. Hammett, Philadelphia.
Wistar Institute of Anatomy and Biology.

[Note.—The letter of Dr. Hammett was referred to Drs. Bailey, Davidson and Bunting for reply.—Ed.]

To the Editor:—The criticism of our work with germanium dioxid by Dr. Hammett requires only a few words in reply. It was just because we realized that "negative" experiments must be free from dietary criticism that we repeated our experiments with a correction of that feature, even though we had made correction in our first series and still obtained negative results.

In regard to controls, it may be said that as far as the blood reactions are concerned the animals injected furnished their own control as to food and environment by being held for observation over a suitable period before being treated with the drug. For pathologic control, Dr. Hammett may accept or not the twenty-five years' experience of the senior member of the group with normal and pathologic rabbits under laboratory conditions.

The germanium dioxid used in our experiments was obtained directly from Professor Dennis of Cornell "for biologic research," and relying on his reputation as a chemist, I will admit we did not look the gift horse in the mouth to the extent of having chemical analysis made to determine purity of the drug.

Finally, we suggested an interpretation of Dr. Hammett's results with rats, which we did not put to experimental test.

C. H. Bunting, M.D., Madison, Wis.

USE OF ELECTROTHERAPEUTIC DEVICES

To the Editor:—In The Journal, June 20, p. 1941, appeared an inquiry from a Nebraska physician and your reply. This reply states erroneously that the Model "P" Dynelectron is not powerful enough for strong electrocoagulation or for autocondensation. Thousands of honest and intelligent physicians are conscientiously using this apparatus and securing positive demonstrable results from it.

For autocondensation the Dynelectron will deliver 1,000 ma. on an average size patient; on one with heavy wrists and arms as much as 1,100 ma., and on a light weight at least 900 ma. In actual treatment we have rarely if ever found more than 800 ma. used, and often a smaller amount. Further, we guarantee the apparatus to deliver its full rating continuously, twenty-four hours a day, without injury or overheating.

I have witnessed hundreds of electrocoagulation operations by as many operators and I have yet to see a single instance in which the full power of the machine was required.

The Dynelectron has both a high and a low voltage electrocoagulation circuit. Before the present models were placed on the market, all makes of powerful apparatus had only a comparatively high voltage on the electrocoagulation circuit. The high voltage is necessary in working on bone, cartilage or fatty tissue. On the other hand, for work on tissue only, which constitutes the largest percentage of all electrocoagulation done today, a low voltage is preferable, giving a much better control of the field of operation and a much better cosmetic end-result. The Model P and Model F Dynelectrons have always been equipped with both the high and the low voltage circuits. The decided advantage of having both modalities is shown by the fact that practically all manufacturers have incorporated the low voltage coagulation in their apparatus since it was first brought out on the Dynelectron.

We submit letters from many physicians, users of the Dynelectron, which demonstrate the truth of our statements.

THE LIEBEL-FLARSHEIM COMPANY,
G. H. LIEBEL, President, Cincinnati.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request.

THROBBING IN THE EARS

To the Editor:—I have a patient, aged 65, who has a throbbing in the ears which she says occurs at the same time as the heart beat. Her ears have been examined, but we have found nothing to cause this condition. The blood pressure varies from 120 to 150 systolic and from 80 to 85 diastolic. Will you kindly give your opinion and any suggestion as to treatment? Please omit my name. K. C. W., Ont., Canada.

ANSWER—The causes of a "throbbing" or other noises in the ears are either local conditions present in the middle or inner ear, or certain systemic abnormalities. In the ear itself, we often find that secretion in the middle ear (either pus or mucus), as in an otitis media or a chronic tubal catarrh, or adhesions following various inflammatory processes, may produce low pitched, rumbling sounds. When there is an infection or degeneration of the inner ear or the auditory nerve, there is usually a high pitched whistle or noise.

We know that a severe anemia often produces a hemic murmur, but there is also the possibility that the patient hears the pulse because of the close proximity of the internal carotid artery to the middle ear as it passes through the temporal bone. While it is true that high blood pressure may produce noises or tinnitus aurium, such is probably not the case in the patient whose blood pressure our correspondent has given We would suggest that pressure with the thumb be applied over the carotid artery to see whether that will temporarily stop the throbbing, or at least reduce the sensation. If this proves to be so, it might be advisable to try for an hour or so at a time a tight fitting bandage or neck band in order to see whether that will give the patient any temporary relief. At the same time, it might be advisable to give sodium bromid, in 0.65 gm. doses three or four times a day, well diluted with water, in the effort to diminish the noises. When sleeping, the patient might try a rather high pillow in order to avoid as much as possible passive congestion in the head.

TREATMENT OF SNAKE-BITE

To the Editor.—Can you inform me whether the chlorids of mercury have any action (local or general, curative or preventive) on snake bite? I want to ask you this, because I have read from the "Scientific American Cyclopedia of Formulas," Edition 28, by Albert A. Hopkins, the following statement which I am willing to quote entire: "Dr. Corislano d'Utra of Brazil says that persons suffering with snake-bite may be cured in all cases by taking three doses, two hours apart, of 30 grains of calomel in an ounce of lemon juice. He further declares that whoever will carry about his person a bag containing from 75 to 300 grains of corrosive sublimate need have no fear of serpents They will flee from him and if by chance he is bitten, the bite will be harmless" In case you deem this as a nonscientific treatment at all, can you suggest to me the best treatment or treatments you know for snake bite, nowadays most accepted? Please omit my name. M.D., Manila, P. I.

ANSWER—The suggestion that carrying on one's person a bag of mercuric chlorid would act as a preventive of snake-bite or make the bite harmless is, of course, preposterous. The calomel treatment suggested is likewise not established, and it is difficult to see how it could do any good.

The indications in the treatment of snake-bite are the same as those in any other poisoning; namely, first, to remove poison; secondly, to remove its effects. Immediate interruption of absorption should be attempted by a stasis bandage applied proximally to the bite for, say, twenty minutes, and loosened after this for a time at intervals so as to permit very gradual absorption as well as to maintain sufficient circulation in the limb and to prevent damage from constriction.

Removal of the poison from the wound—after having enlarged it by an X-shaped incision about one-fourth inch deep—by sucking, by washing or by destruction by red heat or by means of a caustic is the next thing to attend to. Any one of a number of chemical caustics may be used, such as strong acids, phenol (carbolic acid), tincture of iodin, tincture of ferric chlorid or alcohol. Potassium permanganate is especially recommended; its crystals rubbed into the wound, and a 2 per cent. solution injected into and around it. Mercuric chlorid applied locally would also precipitate and destroy the toxic proteins of the venom, but, by reason of its toxicity after absorption, would not be as safe a caustic as the others mentioned.

The third most important remedy is the injection of antivenom serum, which must be specific for the particular venom involved.

Lavage of the stomach with dilute potassium permanganate solution, and "washing of the system" by the introduction of large quantities of fluid are of more doubtful benefit; so is the use of alcohol freely enough even to produce drunkenness. Less questionable is the use of strychnin, which is recommended in this condition even in doses of 10 mg. (!) every fifteen minutes, until slight spasms occur. Aromatic spirit of ammonia, 1 c.c., in water may be used every fifteen minutes, if required for collapse.

It is best to keep from being bitten by wearing strong shoes and leather puttees when going through thickets, by avoiding the handling of snakes, and by protecting their natural enemies.

VITAMINS IN MARGARINS

To the Editor—Kindly inform me as to the comparative value of nut and animal fat oleomargarins and dairy butter with respect to their content of vitamins needed for growth and maintenance of health in adults. M. B. DEAN, M.D., Candor, N. Y.

ANSWER—Margarins made from nut oils are totally deficient in vitamin A—the fat-soluble factor. Oleomargarin, made from animal fats, contains very definite amounts of the fat-soluble factor. Dairy butter, it is well known, varies greatly in its content of the fat-soluble A factor. The variations are due to the various conditions, such as the rations on which the butter fat has been produced and the length of time that the cream has been kept before being made into butter.

INTRAVENOUS AND HYPODERMIC TREATMENT FOR WORMS

To the Editor—I have just been informed that a certain physician advised a patient that he had "worms," and then immediately proceeded to give him "punctures" (hypodermic injections) as treatment. I do not know whether he gave these injections for parasites or not; but I am much interested to know whether there is any kind of hypodermic treatment for intestinal worms or other intestinal parasites, and shall greatly appreciate your giving me this information Also, I might ask, is carbon tetrachlorid ever given, or can it be given, hypodermically for this purpose? LOUIS HANNAH, M.D., Augusta, Ga.

ANSWER.—There is no known hypodermic or other needle treatment for intestinal worms. The only such treatment for intestinal parasites is the injection of emetin in intestinal amebiasis. Carbon tetrachlorid would never be given hypodermically as an anthelmintic, for it is a violent poison as it enters the system and it is only the fact that it is absorbed with great difficulty that renders it safe as an anthelmintic.

INHALATION OF MERCURY IN THE TREATMENT OF SYPHILIS

To the Editor—May I ask what your records show of the earliest date when metallic mercury was used in the inhalation treatment of syphilis? J. W. STEVENS, M.D., Mount Vernon, N. Y.

ANSWER.—Drs. Cole, Gericke and Sollmann, in an article on the treatment of syphilis mercury inhalations (*Arch. Dermat. & Syph.* 5:18 [Jan.] 1922), assign the first use of fumigations of mercury in syphilis to Angelo Bolognino, professor of surgery at the University of Bologna in 1506. The authors state that Jacques Catanee also used them about the same time. The authority for these statements is Jean Astruc (Traité des maladies vénériennes, Paris, Cavelier and Sons 2:177, 1754).

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13. Ch., Dr. Samuel W. Welch, Montgomery.

Arizona: Phoenix, July 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

California: San Francisco, July 6-9. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, July 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

Connecticut: New Haven, July 14. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

District of Columbia: Washington, July 14. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

Hawaii: Honolulu, July 13. Sec., Dr. G. C. Milnor, 401 S. Beretania St., Honolulu.

Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, 333 State House, Indianapolis.

Maine: Augusta, July 7-8. Sec., Dr. Adam P. Leighton, Jr., 192 State ., Portland.

Iassachusetts: Boston, July 14-16. Sec., Dr. Charles E. Prior, State House, Boston.

North Dakota: Grand Forks, July 7. Sec., Dr. George M. Williamson, 860 Belmont Ave., Grand Forks.

Oregon: Portland, July 7-9. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 7-11. Sec., Dr. J. George Becht, State Capitol, Harrisburg.

Philippine Islands: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

South Dakota: Deadwood, July 21. Dir., Dr. H. R. Kenaston, Bonesteel.

Utah: Salt Lake City, July 7. Dir. of Regis., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

Washington: Olympia, July 6. Sec., Mr. William Melville, Olympia.

West Virginia: Martinsburg, July 7. Sec., Dr. W. T. Henshaw, Charleston.

New Mexico April Examination

Dr. William T. Joyner, secretary, New Mexico Board of Medical Examiners, reports the written examination held at Santa Fe, April 13-14, 1925. The examination covered 12 subjects and included 100 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Toronto		(1923)	84.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College		(1909)	Texas
University of Colorado		(1917), (1923)	Colorado
Louisville Medical College		(1904)	Washington
Medical Department of the Tulane University		(1906)	Texas
Minneapolis College of Physicians and Surgeons		(1895)	Minnesota
University of Nebraska		(1921)	Nebraska
Long Island College Hospital		(1890)	Arizona
Eclectc Medical Institute, Cincinnati		(1896)	Illinois
University of Tennessee		(1905) Oklahoma, (1912)	Mississippi

Maine March Examination

Dr. Adam P. Leighton, Jr., secretary, Maine Board of Registration of Medicine, reports the written examination held at Portland, March 10-11, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital of Philadelphia		(1924)	83
McGill University		(1923)	88
University of Montreal		(1924)	76
University of Cologne, Germany		(1922)*	79

College	FAILED	Year Grad.	Per Cent.
University of Montreal		(1922)	74

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Maryland		(1923)	Maryland
University of Vermont		(1924, 2)	Vermont

* Graduation not verified by the American Medical Association.

Book Notices

The Life of Sir William Osler. By Harvey Cushing. In two volumes. Cloth. Price, $12.50 net. Pp. 1413, with illustrations. New York: Oxford University Press, 1925.

"In the hope that something of Osler's spirit may be conveyed to those of a generation that has not known him."

With this dedication, in part, Dr. Harvey Cushing presents to the literary and medical worlds the first biography of Sir William Osler. *First* we emphasize because, no doubt, this excellent accumulation of Osleriana will form the basis of many an interpretative biography of the future. Indeed, Dr. Cushing makes little pretense to biographic art, modestly expressing his intention to let Osler's "story so far as possible tell itself through what he puts on paper." "Here are merely the outlines of the final portrait," says Dr. Cushing, "to be painted out when the colors, lights and shadows come in time to be added."

On July 12, 1849, William Osler was born in a parsonage in upper Canada. It is interesting to learn that he was intended for the ministry until, of his own accord, he chose medicine as a career. But all through his younger days the religious and the spiritual played an almost equal part with the scientific in guiding his habits of thought. As might have been expected, the books in the Osler home were essentially religious in character, and his education was largely conducted in institutions over which presided school masters whose title of "reverend" was perhaps their most significant qualification. Early in the career of the boy there came to light that tendency to practical joking which was to be an outstanding characteristic and which perhaps enabled him so well to survive with equanimity numerous changes of scene and such tribulations as came on him from time to time. Fortunately for the young man, his personality attracted friendships of great value in determining the scientific trend of his life; thus he passed through the shaping hands of three preceptors, who were able to mold him constantly to his advantage. One might well pause here to discourse on the meaning of such preceptorship and to hope for the time in the future when each aspirant to medicine or to other of the social professions may again have opportunity for this type of guardianship.

The Reverend W. A. Johnson was the first of his teachers to establish in William Osler a scientific curiosity. This preceptor had a microscope and a library which, though chiefly ecclesiastical, likewise contained scientific volumes of considerable merit. He it was who gave Osler opportunity early to develop a technic in the preparation of material for microscopy and to learn the scientific method.

Dr. Cushing gives us much material relative to the life of the boy Osler and the shaping of his career; nevertheless, it is difficult to get any real conception, even from the large amount of material presented, of what it was that made him later an important figure among men. For instance, it is said:

> Though a high-spirited boy and the ringleader in many escapades, Osler is said by his contemporaries to have been so straightforward, manly, and clean—"unobtrusively good without sanctimonious pretence"—that he exerted a splendid influence on the morale of the school.

That is, after all, the kind of thing that is said about all men who ultimately become successful; it is perhaps most likely to be said in retrospect of those who achieve mercantile or financial success, but it has even been said of Jesse James that in his youth he was "straightforward, manly and clean."

While under the tutelage of the Reverend Johnson, Osler came also to some extent in remote contact with Dr. James Bovell, medical adviser to the school, but at the same time dean and professor of medicine in Trinity College and later a member of the faculty of the Toronto Medical School. Bovell had studied in Dublin under Stokes and Graves, and, strangely enough, turned from medicine to the church.

It is well known that Osler loved above all other books Browne's "Religio Medici." When he was but 17 years of age, the book was brought to his attention by the Reverend Johnson, who used to read from it to his class. When he was 18, his elder brother presented him with a copy of a book containing a sketch of Sir Thomas Browne. It was when he was 19 and still attending Trinity College for his second year in arts that he announced to his parents and to the faculty his determination to go into medicine. Of his medical education there appears to be but little record. We are told that his surviving classmates are unanimous in stating that he was exceptionally studious and faithful in his attendance at lectures; that he spent most of his hours in dissecting rooms, and when not so engaged was always to be found looking through a microscope at Bovell's cells; that he was a general favorite not only with the class but also with the faculty, and that the teachers were apt to turn to him when others could not answer their questions. There is even a story of the young, somewhat small Osler being the only member of the class successful in boxing with the class champion. This sort of thing one would prefer to have omitted from the biography of such a man as Osler; it also appears regularly, in fond retrospection, in all of the standard biographies of all the successful men.

Amidst this unessential detail appear, however, many significant facts. Perhaps one of the most striking is the statement that Osler, when coming to a decision, would write almost automatically again and again the name, "James Bovell, M.D., James Bovell, M.D." Here is a demonstration of an influence of the greatest importance. When the boy was not attracted by the lectures in the medical school or when he pondered an idea, his notes are marked ever and again by the writing of the name of James Bovell. It is to Bovell at this period in the life of Osler that most of the readers' interest must be given, for this man was essentially the determiner of his future. It is well that Osler was permitted in 1870, on the occasion of the amalgamation of Toronto and Trinity schools of medicine, to pay a tribute to James Bovell, which he did in the following words:

> When in September, 1870, he wrote to me that he did not intend to return from the West Indies, I felt that I had lost a father and a friend; but in Robert Palmer Howard of Montreal I found a noble stepfather, and to these two men and to my first teacher, the Rev. W. A. Johnson of Weston, I owe my success in life—if success means getting what you want and being satisfied with it.

In 1870, William Osler took up the study of medicine at Montreal in the McGill Medical School. The chapters covering this portion of his biography give us perhaps too brief a picture of the school of that day. He went abroad for study in London in 1872, and, indeed, conducted some elementary research of considerable interest. At this time, though but 23 years of age, he had already published several papers of importance, and we find him composing letters to the Canadian medical journals descriptive of scientific work abroad. He went also to Berlin, and his letters give excellent pictures of the student life of that day. In Vienna, in 1874, he kept a brief diary which, however, is filled with quite inadequate notes. Finally, he returned to Canada and for a time took over the work of a local practitioner in Dundas. The first fee entered in his account book read "Speck in cornea . . . 50 cents." He served also as locum tenens in Hamilton, receiving $25 and a pair of old fashioned elastic sided boots.

Finally, on July 6, 1874, he received the offer of a lectureship on the "Institutes of Medicine" in McGill; this incidentally without doubt through the influence of his preceptor, R. P. Howard. One finds him now conducting his life in the usual manner of such lecturers, teaching physiology and histology, the subjects comprised by the "Institutes of Medicine." The students paid fees directly to the instructors, who provided equipment, and it is significant that Osler purchased twelve microscopes and also numerous photographs of leaders of medicine from abroad. He continued also to write essays on many medical topics. The microscopes were purchased with funds which he received for attendance on the smallpox ward in Montreal, and the chapter dealing with his life while studying smallpox and with the attack which he himself suffered is exceedingly important. It is interesting to learn also that on May 1, 1876, the position of pathologist to the Montreal General Hospital was created, and that William Osler in the necropsy room of that institution laid the foundation of his subsequent career as a clinician. It must be remembered that at this period of medical history pathology was dominant and, indeed, was coming completely into its proper position in the medical plan.

From this time the life of Osler becomes that of other great practitioners, but one exceptionally full of meetings, writing for medical periodicals, lecturing and investigations. It should be reiterated that his was an especially full career marked by assiduous attention to dozens of activities, institutions and organizations, and illustrating again that it is those men who are doing the most who are able to take on additional activities.

It is not within the scope of a review to cover the details in the subsequent life of Osler at Montreal; to tell of his call to Philadelphia, which occupies the second part of the first volume, together with the subsequent removal to Baltimore. All of these things are told by Harvey Cushing with tremendous attention to minutiae and with the reproduction apparently in toto of Osler's rather large correspondence. Much of it appears for the casual reader quite superfluous. Indeed, the extent of the material of this biography makes it difficult even for the careful reader properly to assign significance to individual items, and, in fact, even to carry in mind such facts from the beginning of the work until its end. Of particular moment, however, are the factors underlying the calling of Osler to each of his great American appointments and the methods of selection of the staff of the Hopkins hospital and medical faculty. Here, too, appears the account of Osler's marriage.

The second volume of the biography of Sir William Osler is devoted to the Oxford period: "from a noisy Baltimore corner and the hurly-burly of the preceding month to the quiet of an Oxford suburb." Naturally, the Osler domicile became a sort of American shrine. It was at this time, October, 1905, that Mrs. Osler was enabled to write: "The new edition of the textbook is just out, and No. 100,000 has been given to Revere"; an indication of the sales of the "medical bible."

The interest of Sir William Osler in medical history, the manner in which he inspired young men, his citizenship, his contributions to medical literature and to the building of medical libraries; in fact, all of the numerous activities which made him the exceedingly broad person that he was, are reflected in the more than fourteen hundred pages of these biographic volumes, books that will merit an entire summer of reading and which, as has been suggested, will form the basis of numerous shorter and simpler essays for both medical and lay consumption.

The literary style of Cushing's biography of Osler is excellent, though marked occasionally by Americanisms such as the following:

> The despised female, the day before having upset a pail of slops on the stairs, which soused one of the boys.
> The art of illustration was not his best card.

The predominant notes of the work, so far as the character of Sir William Osler is concerned, are his essentially prankish nature, his tremendous activity, his undoubted puritanism and his admiration for the classic.

The accumulation of this material and the writing of this book has been clearly a labor of love for Dr. Cushing. One can imagine him wishing again and again to discard some letter, some anecdote or some memory, and finally determining to include it in the work. The notes which occasionally creep into the comment give promise that Dr. Cushing himself may see fit in the future to prepare a work somewhat more limited in detail and far more valuable as an interpretative analysis of Osler's life.

DES KINDES ERNÄHRUNG, ERNÄHRUNGSSTÖRUNGEN UND ERNÄHRUNGSTHERAPIE. Ein Handbuch für Aerzte. Von Professor Ad. Czerny, und Professor A. Keller. Second edition. Paper. Band I, Teil I. Price, $5.40. Pp. 668, with illustrations. Band I, Teil 2. Price, $4. Pp. 669-1078, with illustrations. Leipsic: Franz Deuticke, 1925.

The new edition of this valuable treatise on the physiology and pathology of infant nutrition, the first volume of which is at hand, has undergone many modifications and revisions, and records the advances that have taken place in the knowledge of normal and pathologic nutrition in infants. The authors consider in great detail the nutritional requirements of the normal infant as well as maternal nursing, wetnursing and artificial feeding. The book is a perfect encyclopedia, giving numerous references and experimental data and tables on all that refers to the chemistry and physiology of digestion and the metabolic changes that occur during infancy. Perhaps in no other volume will be found so complete an account of the chemical composition of the infant body. The authors consider in great detail the chemical substances that compose the normal body, together with the changes in the fetus at varying ages, and they continue their studies by investigating the influence of nutrition on the chemical composition of the infant organism. One short chapter is devoted to an interesting discussion of reserve depots in the fetus and infant body, repositories for various mineral substances essential for the upbuilding processes of the developing organism. In this respect, more is known about iron than any other mineral. The principal depots for this substance are found in the liver, spleen and bone marrow. In the newly born animal the principal storehouse for iron is the liver. It is estimated that there is ten times as much iron in the liver of the new-born calf as in that of the grown animal. The authors point out that in the storing of various mineral substances in the repositories or organs there seems to be a dependence of one substance on another; for example, the deposition of calcium depends on the presence of phosphorus, and both seem to depend on the association of other alkalis. The deposition of iron seems to vary in its ability to be stored by the presence f phosphorus. The authors think that this is a field of etabolism which merits further investigation, and gives romise of shedding new light on the chemistry of metabolic processes. They also think that this process of storing reserve supplies in various repositories is a different matter in infants than in adults. So many topics are considered, including physiology and anatomy of the digestive tract, bacterial flora of the tract in both health and disease, and the metabolism of infancy and childhood and also the problems of growth and development, that these volumes will be for a long time a source book and guide for those who are interested in the problems of infant and child nutrition. The teacher, the writer and the practitioner will frequently find a ready explanation for difficult and unsolved problems in these encyclopedic volumes.

Medical Spanish (El Español para el Médico). By A. A. Moll, A.M. Cloth Price, $1. Pp. 133. Chicago: American Medical Association, 1925.

Spanish-English Medical Dictionary (Diccionario Médico Español-Inglés). By A. A. Moll, A.M. Cloth. Price, $1. Pp. 127. Chicago: American Medical Association, 1925.

El Inglés para el Médico (Medical English). Por Lcdo A. A. Moll. Cloth. Price, $1. Pp. 135. Chicago: American Medical Association, 1925.

Medical Spanish and Inglés para el Médico (Medical English) are complementary handbooks, the former being in English and the latter in Spanish. The two follow the same plan. "Medical Spanish" presents the points of Spanish grammar and of the Spanish language that the English-speaking physician might wish to acquire. Rules for pronunciation of Spanish, and grammatical principles and constructions are given in a clear, understandable style, and with a wholesome brevity. Sample prescriptions written in Spanish, tables of weights and measures, temperature and currency are shown. Following this is an extensive vade-mecum, or collection of phrases, such as might be used by the physician in his work. These phrases are grouped into typical conversations under various conditions, such as receiving the patient, taking the clinical history, making inquiries about injuries, the nervous system, visual system, respiratory diseases, genito-urinary system, and giving instructions to a family or to a patient. A generous list of English medical terms followed by the Spanish equivalent is provided. These are arranged according to subjects, such as muscles, arteries, bones, nerves, diseases, surgery, insects, parasites, bacilli, drugs and poisons. "Medical Spanish" will appeal to those physicians who may be interested in Spanish from the cultural point of view, or to those who may come in contact with Spanish-speaking patients. It would be extremely valuable to any physician contemplating a sojourn in Spanish-speaking countries.

Inglés para el Médico (Medical English) is of interest to the Spanish physician wishing to learn the language of his English colleague. The explanations in this book are in Spanish, and the pronunciation and the grammatical principles of the English language are explained in a brief and simple manner. The vade-mecum, or section devoted to typical conversations of the physician, is in Spanish and followed by the English equivalent with phonetic pronunciation. The list of medical terms is much the same as in the work "Medical Spanish," but naturally the order is reversed, the Spanish word being given first and followed by the English equivalent.

The Spanish-English dictionary is a compilation of the medical words that a Spanish physician would find necessary in the practice of his profession. The common, everyday terms of the layman are not included. The dictionary is strictly medical. For example, under the "A's" one finds the words running: "ablacació, weaning; ablandar, to soften; ablepsia, blindness," and so on. About 9,000 terms are included, the Spanish words appearing in strict alphabetical order followed by the English equivalent, with the phonetic pronunciation of the latter for the convenience of Spanish-speaking physicians. The dictionary, however, is equally useful for the English-speaking physician wishing to learn Spanish.

The three books are a distinct contribution to the promotion of better understanding between the physicians of North America and of Latin America. No similar works are extant, so far as we know, and these will fill a practical purpose.

New and Nonofficial Remedies, 1925. Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1925. Cloth. Price, $1.50. Pp. 461. Chicago: American Medical Association, 1925.

New and Nonofficial Remedies is the publication through which the Council on Pharmacy and Chemistry annually supplies information with regard to proprietary and unofficial medicaments which are offered to the medical profession and which are deemed worthy of recognition. For each product there is given a statement of its composition, actions, uses and dosage. Each edition differs from its predecessor in that the preparations that were investigated during the year and found acceptable have been added; in that many products have been omitted because they were found no longer to comply with the criteria that formed the basis of admission or were taken off the market and—most important—in that the subject matter of the book has been brought in accord with the most recent knowledge of drug action. A glance at the preface of the 1925 edition shows how extensively the book has been revised: of the revisions it will suffice to state that a chapter on medicinal dyes has been added and the portion dealing with endocrine preparations has been rewritten to bring it in accord with the series of articles on glandular therapy, published in The Journal last year under the auspices of the Council. The book contains an appendix (printed on buff paper) which contains a list of references to reports of the Council and other publications concerning articles not described in New and Nonofficial Remedies. Every physician has need for a book of reference such as this volume to which he may turn for trustworthy information with regard to proprietary medicines.

Pathologisch-anatomische Sektionsmethode. Nach den Grundsatzen des Pathologischen Institutes der Prager Deutschen Universitat. Herausgegeben von Dr. Béla Halpert. Mit einem Geleitwort von Prof. Dr. A. Ghon, Vorstand des Institutes. Paper. Price, 50 cents. Pp. 48. Vienna: Julius Springer, 1924.

The author gives a condensed description of the postmortem method used and adopted at the Institute of Pathologic Anatomy of the German University of Prague. This method is a combination of the classic methods of Virchow and Rokitansky, and is a modification of Zenker's method first described by Hauser in 1913 in his book, Zenker's Postmortem Technic, and consists in removing from the body the entire system of the organs after a careful examination in situ. The organs of the chest and neck are removed together, and in the same way the organs of the upper abdominal cavity, the organs of the genito-urinary system and so forth. The description of each single organ is supplemented with exact anatomic notes, including the inspection of the blood vessels and the lymphatic system. The author does not give the description of postmortem examination of the bones and joints.

Miscellany

CHILD MARRIAGE IN THE UNITED STATES

In fourteen states, boys may marry at 14 and girls at 12 years of age, provided only that the consent of the parents has been given. In nine states the minimum marriageable age for girls is 14, in eight states, 15, and in seventeen states, 16 years. These figures, taken from a report on the extent of child marriage in the United States published by the Russell Sage Foundation (Richmond, M. E., and Hall, F. S.: Child Marriages, New York, Russell Sage Foundation, 1925), bring to light an interesting social problem.

No adequate proof of age is required by many license bureaus, nor do they demand actual evidence of parental consent where this is legally required. The investigators have estimated the extent of child marriages in our country by applying actuarial formulas to census statistics. Apparently 343,000 women and girls began their married lives as child brides within the last thirty-six years, but the marriage of boys is not so large a problem.

Voicing their regret of the American sentimentality that invests child marriages with romance, their review of the physiologic and social aspects of the custom reveals broken-down mothers of middle age, girls married before puberty to men a score or more years their seniors, child-divorce, weakly offspring of immature mothers, and marriage to permit a girl or boy to leave school, or to prevent criminal prosecution of a man.

For 250 cases, Richmond and Hall were able to secure some pertinent facts concerning the marriages of children (that is, boys of 17 or younger, and girls of 16 or younger). As twenty of these children married one another, 240 such marriages were investigated. Information was gathered from juvenile courts, judges, license issuers, chiefs of police and social agencies. Obviously, the data obtained from these sources lack a due proportion of marriages with "happy endings." However, the cases illustrate the ease with which tragedies may occur for both partners to the marriage, for the children resulting from such unions, and for the parents of boys and girls. These marriages occurred in thirty-one states and were by no means limited to foreigners. Of ninety couples whose present status could be learned, only sixteen pairs were living together. In many instances the marriage was marked by great haste, which, in some cases, amounted to abduction. More than half of the 240 licenses were issued illegally. The illegality in most instances was failure to secure parental consent, although in 109 instances the parents agreed to the marriage. Thirty of the children were under the legal age for the granting of a license even with the consent of the parents. Of these children, four were 11 years of age, five were 12, and eighteen were 13 years of age. The marriage licenses were obtained because of laxity in the administration of the law; for example, affidavits of age are accepted instead of proof, and parents' signatures are not verified.

One of the worst features of these illegal child marriages is the ease with which annulment may be obtained, thus instituting a system of trial marriages for the youthful. Such annulments are not readily secured in supreme and appellate courts, but are given without reluctance by many inferior courts. This feature of the situation is worst in states that have a relatively high minimum age for marriage without parental consent, since in many instances this consent is given for selfish motives or with fallacious well-meaning. The courts guard the property of minors from parental errors of judgment or intent.

The grant or refusal of a license to a girl who claims to be pregnant entails several problems. Where no adequate proof of pregnancy is demanded, the age limit is lowered at the will of the contracting parties. Even if the pregnancy exists, the age-old remedy of marriage may not be the best solution for the child mother or for the other parties concerned. Child welfare standards are not in agreement with some legal and accustomed solutions for such involved situations.

The next steps in dealing with child marriage—as outlined by Richmond and Hall—are directed toward improved administration of the law, as well as improvements in legal enactments. The license issuer may be aided or prevailed on to demand proofs of age, identification of candidates for a marriage license and of persons claiming to be parents, application in person by both parties, and verification of the signatures of parents. The law in states now lacking adequate legislation should be revised, as fast as public opinion permits, in order to establish a reasonable and enforceable minimum marriageable age, to require a few days' notice of intention to marry, to abolish the marriage-market town, and to destroy the fee system for the recompense of license issuers.

NATIONAL CAMPAIGN AGAINST BOVINE TUBERCULOSIS

The U. S. Department of Agriculture reports that the nation-wide drive to eradicate bovine tuberculosis up to April 1 included 10,201,492 cattle under supervision; 6,777,624 cattle in herds successfully passing the first test; 1,187,908 cattle in fully accredited herds; 617,810 cattle tested during March; 19,841 cattle reacting to the test during March; 3,498,072 cattle on the list to be tested, and sixty-nine counties recognized as free from bovine tuberculosis. Reports show unusual interest in tuberculosis eradication on a county-wide basis. In the first three months of the year, the number of counties having less than 0.5 per cent. of the disease increased from fifty-three to sixty-nine. Veterinary officials of the Bureau of Animal Industry consider that such progress is proof of the practicability eventually of freeing entire states from bovine tuberculosis.

TRAINING SCHOOLS FOR COLORED NURSES

The Hospital Library and Service Bureau of the American Conference on Hospital Service has just completed a study of the educational facilities for colored nurses. Questionnaires were sent to the 1,696 accredited schools of nursing in the United States, forty-eight state boards of nurse examiners, 933 city and county health officers, various national associations, and a special list of institutions. The report comprises two volumes, copies of which have been placed on file with the American Nurses Association, National Organization for Public Health Nursing, and the National League of Nursing Education. There are fifty-four accredited schools for nurses which admit colored students, sixty-six hospitals which have colored graduate nurses, fifty-nine departments of health which employ colored nurses, and nineteen visiting nurses' associations which use colored nurses. There were twenty-one hospitals among the 1,696 institutions reported on which used colored interns.

LESS BLINDNESS FROM OPHTHALMIA NEONATORUM

The National Committee for the Prevention of Blindness states that there has been about a 50 per cent. decrease in the amount of blindness among pupils from ophthalmia neonatorum. A table covering the last seventeen years showing the number of new admissions annually to classes for the blind in public schools and to schools for the blind shows that in 1907-1908, 26.6 per cent. of the total new admissions were due to ophthalmia neonatorum and that there has been a gradual decrease, excepting a few years, until in 1923-1924 the percentage of new admissions due to this cause was only 12.7. The campaign for the elimination of ophthalmia neonatorum obviously is not markedly reflected in these statistics until rather recently. It requires from eight to ten years before children affected enter schools for the blind. The national committee has among its members now 146 ophthalmologists and 233 other physicians.

Medicolegal

Improper Action on Physician's Report

(Gannuzzi v. Foxwood Const. Co. et al. (N. Y.), 207 N. Y. Supp. 363)

The Supreme Court of New York, Appellate Division, Third Department, says that in this proceeding under the workmen's compensation law the referee at the close of the last hearing at which evidence was taken directed the claimant to be examined that day, and reserved decision. Dated that same day, there appeared in the record a detailed report by a physician, which concluded: "It is my opinion that the injury might precipitate an already existing condition present." This report evidently influenced the decision of the state industrial board, because it found that the injury "so aggravated and activated the preexisting condition" as to cause the subsequent condition from which it found the claimant to be suffering, and for which it made an award in his favor. From the record it did not appear that the employer and the insurance carrier had any knowledge of this report of the physician, or any opportunity to examine him in reference thereto. It appeared to have been received outside of any regular hearing. It was error for the board to receive and act on this report without the knowledge of the employer and the insurance carrier, thus depriving them of the right of examination in respect thereto. Wherefore the award for the claimant and a subsequent award confirming it were reversed and the matter sent back for further action.

Refusal to Submit to Immobilization Unreasonable

(Chicago Bridge & Iron Works v. Sabin et al. (Okla.), 231 Pac. R. 851)

The Supreme Court of Oklahoma holds that where an employee is injured and claims compensation under the workmen's compensation laws of that state, and receives it up to and including the date when he should have been cured had he submitted to medical and surgical treatment in no manner endangering life to the slightest degree, or occasioning pain, he cannot recover compensation for an increase of disability due to his failure to accept such treatment and use ordinary care to avoid aggravating the injury.

The claimant in this case was injured, the court says, by trying to keep a box of rivets from falling on his feet. Considering the testimony of six physicians who examined him, there could be no doubt that the seat of the trouble was in the sacro-iliac joint. Two of the physicians who examined him shortly after the accident strongly advised placing the injured member in a plaster cast, for the purpose of immobilizing the joint until the muscles, ligaments and tendons were so repaired and strengthened as to hold the joint in place. To this treatment he refused to submit, although it is a matter of common knowledge that incasing an injured leg in a plaster cast is not dangerous to life, and while professing no knowledge of medicine or surgery it appears to the lay mind that the treatment advised was plain, simple, practically painless, though inconvenient perhaps, and the reduction of a fracture, or displacement or dislocation of a joint, and the immobilization of the injured part, by splints or otherwise, would be the first remedy appealing to a man injured, perhaps hundreds of miles from medical aid. After this claimant's refusal to submit to any medical treatment, so far as the record disclosed, four physicians examined him. Three of these examinations were made six months after the injury was sustained, and one fourteen months thereafter, and the physicians agreed that the "sacro-iliac joint had slipped." It requires no excursion into the realms of conjecture or speculation to arrive at the conclusion that this slipping was the natural and inevitable result of the claimant's refusal to submit to immobilization, and his continued use of the injured leg while in a weakened condition.

The claimant owed a duty, not only to the employer, but to himself and family, to restore himself to perfect health as speedily as possible, and to this end he was required to act reasonably, and this, it is apparent, he wholly failed to do. In arriving at the conclusion that he acted unreasonably in refusing the simple medical or surgical treatment advised by the physicians, and that the industrial commission committed error in extending the period of compensation, from a date nine months after the accident occurred, "until the termination of disability or until otherwise ordered by this commission," the court does so fully cognizant that it has held that the commission is without jurisdiction to order an injured employee to submit to a major operation involving a risk of life, however slight, in order that the pecuniary obligations created by the law in his favor against his employer may be minimized. But the case at bar did not fall within the scope of the decision so holding.

Duty Not to Turn Insane Persons Loose

(Ex parte Smith (Ark.), 266 S. W. R. 950)

The Supreme Court of Arkansas, in affirming a decree of a chancery court dismissing a petition for a writ of habeas corpus directed to the superintendent of the United States Veterans' Hospital No. 78, directing him to produce the petitioner before the court and to show cause why the petitioner should not be discharged, says the petitioner alleged that he was imprisoned and illegally restrained of his liberty by reason of the belief of the medical officers of said hospital that he was insane and a dangerous person to be at large, and not by reason of any judgment or order of any court. The superintendent of the hospital filed a response to the petition, and, although the petitioner was entitled to have his mental condition inquired into, for the purpose of determining whether or not he was entitled to be discharged from the hospital, his attorney was content with standing on a demurrer to the response, which set forth all the facts and circumstances under which the petitioner was being detained in the hospital. The demurrer conceded those facts to be true, and the case must be treated here as if the chancellor had found on proper evidence the state of facts set forth in the response.

According to those facts, the petitioner was insane and was a dangerous paranoiac on account of having homicidal tendencies, which had been demonstrated by overt acts in the commission of homicides, and by a recent homicidal attempt. Under those circumstances, the petitioner was not entitled to an absolute discharge from the custody of the hospital authorities. According to the allegations of the response, which must be taken as true, the hospital authorities rightfully received the petitioner into their custody, and the court should not require them to turn him loose and permit him to go at large, if he was afflicted in the manner and to the extent set forth in the response. In this respect the hospital authorities were in the same attitude and were charged with the same duties as any other person having rightful custody of an insane person. The duty is not to abandon an insane person until he can be taken into custody by such person or institution as is charged by law with the duty to care for the insane. The Arkansas statutes provide that, when a person is insane so as to endanger his own person or the person or property of others, it shall be the duty of his guardian or other person under whose care he may be, and who is bound to provide for his support, to confine him in some suitable place until the next term of the probate court for his county which shall make such order for the restraint, support and safe-keeping of such person as the circumstances of the case shall require.

Adequate provision is made by law for the custody and care of insane persons, and of course these statutes have full application to an insane person in the United States Veterans' Hospital; but, until some steps are taken for the legal care and custody of such insane person, the court will not require the absolute discharge of the patient from custody. The facts of this case, as detailed in the response of the superintendent of the hospital, did not show that the petitioner was entitled to an absolute discharge, and the chancery court was correct in refusing to grant relief.

Society Proceedings

COMING MEETINGS

Montana, Medical Association of, Lewistown, July 8-9. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

35: 153-320 (May 15) 1925

*General Morphology of Pancreatic Cell Function in Terms of Nucleocytoplasmic Relation. D. H. Dolley, St. Louis.—p. 153.
*Mitochondria and Colloid in Thyroid of Adult Albino Rat. W. Ma. Peking, China.—p. 199.
Thyroid Apparatus. XXIV. Growth of Heart, Lungs, Liver, Kidneys, Spleen, Submaxillary Glands, and Eyeballs in Albino Rat Thyro-Para-Thyroidectomized and Parathyroidectomized at 75 Days of Age. F. S. Hammett, Philadelphia.—p. 223.
A. Development of Adventitial (Rouget) Cells on Blood Capillaries of Amphibian Larvae. E. R. Clark and E. L. Clark, Augusta, Ga.—p. 239.
B. Relation of "Rouget" Cells to Capillary Contractility. E. R. Clark and E. L. Clark, Augusta, Ga.—p. 265.
Morphologic Study of Panniculus Carnosus and Its Genetical Relationship to Pectoral Musculature in Rodents. O. R. Langworthy, Baltimore.—p. 283.
*Roentgen Ray Studies on Bronchial Movements. C. C. Macklin, London. —p. 303.

Pancreatic Cell Function.—The changes and size of function in the pancreatic cells Dolley found exhibit a stage-by-stage sequence of nucleocytoplasmic relations from metabolic rest to metabolic exhaustion identical with those of other previously investigated somatic types. The mechanistic nucleocytoplasmic process of function, therefore, is identical in all specialized cells and rests on a common quantitative principle. The nucelocytoplasmic sequence of functional stages affords new morphological criteria of the formative metabolic side of secretion as a process in continuity.

Cells of Thyroid.—Ma states that the cells of the thyroid gland in the adult white rat pass through a secretory cycle, the chief feature of which is the formation of mitochondria which later dissolve in cytoplasmic vacuoles to form colloid. Successive stages of regeneration ripening, and exhaustion may be distinguished in the cycle.

Study of Bronchial Movements.—Roentgenograms made by Macklin from a normal human thorax in the stages of full expiration and full inspiration show that there is an elongation of the trunk and all of the branches of the bronchial tree in inspiration and a corresponding shortening of these structures in expiration. The work shows the importance, in clinical practice, of comparative roentgen-ray studies showing full expiration and full inspiration.

American Journal of Electrotherapeutics and Radiology, New York

63: 163-312 (May) 1925

Hepatic and Cardiac Syndrome. W. Martin, Atlantic City, N. J.—p. 163.

American Journal of the Medical Sciences, Philadelphia

169: 469-624 (April) 1925

*Pain Phenomena of Face; Special Reference to Trigeminal Neuralgia. C. H. Frazier, Philadelphia.—p. 469.
*Blood Platelets in Leukemias. G. R. Minot and T. E. Buckman, Boston. —p. 477.
*Effects of External Heat on Human Body. R. Pemberton, Philadelphia. —p. 485.
*Dystrophia Adiposogenitalis, with Atypical Retinitis Pigmentosa and Mental Deficiency, Laurence, Biedl Syndrome: Four Cases. S. Solis-Cohen and E. Weiss, Philadelphia.—p. 489.
*Bell's Palsy; Four Cases of Infectious Origin. V. Dabney, Washington, D. C.—p. 505.
Automatic Synchronization of Roentgen-Ray Exposures. F. M. McPhedran and C. N. Weyl, Pittsburgh.—p. 510.
Electrocardiographic Studies of Effects of Ether on Living Cat's Normal Heart. H. R. Miller and Felberbaum, H. T. Krigel, New York.—p. 516.
*Pathology of Fatal Measles. J. Denton, Boston.—p. 531.
Retropharyngeal Lymphadenitis in Infancy and Early Childhood. S. McLean, New York, and F. H. von Hofe, South Orange, N. J.—p. 543.
Gastric Analysis (Double Simultaneous Fractional Analysis). R. T. Ellison, Philadelphia.—p. 550.
*Comparative Value of Blood Transfusion and Blood Tonics in Secondary Anemias. M. L. Janes, New York.—p. 563.
Calcium and Blood Coagulation; Use of Salted Plasma as Method of Estimating Clotting Time. C. H. Smith, New York.—p. 572.
Icterus Index. J. V. Barrow, E. L. Armstrong and W. H. Olds, Los Angeles.—p. 583.

Etiology of Trigeminal Neuralgia.—Whatever may be the cause of major trigeminal neuralgia, Frazier is convinced that infection plays no part. The pain is relieved only by two measures, alcoholic injection and section of the sensory root. The latter procedure, a major operation, is almost devoid of risk. Frazier has performed more than 300 major operations in cases such as these, the last 205 with only one death.

Blood Platelets in Leukemias.—The blood platelets were studied by Minot and Buckman in seventy-five cases of chronic myelogenous, in fifty cases of chronic lymphatic leukemia and in thirty-five cases of acute leukemia. In chronic myelogenous leukemia the numbers of these elements may be normal, enormously increased, or greatly diminished, and in chronic lymphatic and acute leukemia it is the rule to find them below normal. Petechiae and other hemorrhages associated with decrease of blood platelets are common, and hemorrhages, but not petechiae, may occur in chronic myelogenous leukemia when the platelets are much increased in number.

Effects of External Heat on Human Body.—Pemberton has for some years been studying the changes accruing from exposure of the body to external heat in the form of radiation from electric lamps, the so-called "bake." Such exposure results in a heightened bloodflow, and increased metabolism and in the elimination of acids, chiefly carbon dioxid which escapes through the lungs, urine and sweat in the order of magnitude named. This leaves an excess of alkali in the blood which then changes its reaction, becoming more alkaline. In the compensatory effort to meet this situation, the excess of alkali is eliminated through the sweat and urine. If carried to extremes tetany may result. The available evidence indicates that part of the benefit of the sweat process in some forms of nephritis is due to loss of acid substances from the body, with consequent benefit to the acidosis frequently accompanying renal disease.

Dystrophia Adiposogenitalis.—Solis-Cohen and Weiss report on four of eight brothers and sisters of Italian parentage, who exhibited marked adiposity with mental deficiency, genital dystrophy and diminution of vision. Two of the abnormal children show polydactylism. The eyegrounds showed atypical retinitis pigmentosa. The fat distribution was largely of the girdle, mons and mammary type. A hypophysial lesion could be proved. Roentgenray examinations of the sella region did not show conclusive changes. No anomaly of osseous development was found. Sugar-tolerance tests did not indicate pituitary disease. Basal metabolism was below normal in three of the children. Both parents and children gave negative Wassermann reactions. The thyroid glands were palpable and within ordinary limits of size and consistency. There was no lymphadenopathy, and no history of rickets. Family history of marked adiposity, visual defect, polydactylism, deafness or idiocy could not be obtained. The four unaffected children seemed entirely normal.

Bell's Palsy.—Dabney sees a definite connection of infection, or at least its presence in cases of Bell's paralysis, as well as the existence of a nervous diathesis. He says that every case will show some focus of infection, whether it be in teeth, tonsils, nasal accessory sinus or some other place and that such infection is the cause of every case of so-called Bell's palsy.

Pathology of Fatal Measles.—In eleven fatal cases of measles, Denton performed a necropsy; in eight cases death was due to bronchopneumonia, differing in no important particular from the bronchopneumonia often observed after measles. In three cases death occurred so soon that bronchopneumonia of any important extent had not yet developed. From observation of the patients, from the circumstances under which they died, and from the pathologic changes found, it is believed that the deaths were due to uncomplicated measles and that the lesions found are the lesions of the disease.

Blood Regeneration in Anemia.—The observations made by Janes confirm the findings of others that iron and arsenic preparations have a negative effect on blood regeneration and the correction of anemia. Individuals suffering from secondary anemia due to acute or chronic disease regenerate hemoglobin and red blood cells more rapidly, more effectively, more completely and within a shorter period of time by periodic blood transfusion than by receiving inorganic iron or arsenic preparations. Iron and arsenic preparations exercise practically no beneficial effect in correcting secondary anemias.

American Journal of Physiology, Baltimore

72: 241-385 (April 1) 1925

Influence of Exercise on Muscle Tonus Exhibited by Knee-Jerk. L. T. Brown, Urbana, Ill.—p. 241.

*Influence of Glands with Internal Secretions on Respiratory Exchange. VIII. Effect of Feeding Emulsions of Interrenal Gland to Rabbits. D. Marine, E. J. Baumann and A. Cipra, New York.—p. 248.

Mode of Transference of Calcium from Shell of Hen's Egg to Embryo During Incubation. G. D. Buckner, J. H. Martin and A. M. Peter, Lexington, Ky.—p. 253.

*Influence of Insulin on Inorganic and Organic Phosphates of Liver. C. F. Cori and H. L. Goltz, Buffalo, N. Y.—p. 256.

Amino-Acids in Nutrition. IX. Rôle of Alanine and Indol in Synthesis of Tryptophane by Animal Organism. B. Sure, Fayetteville, Ark.—p. 260.

*Maximum of Human Power and Its Fuel. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 264.

*Activity in Endocrine Glands. XV. Pseudaffective Medulliadrenal Secretion. W. B. Cannon and S. W. Britton, Boston.—p. 283.

*Id. XVI. Rôle of Suprarenal Medulla in Pseudaffective Hyperglycemia. E. Bubatao and W. B. Cannon, Boston.—p. 295.

Comparative Effects of Epinephrin Infusions on Blood Pressure and Gastro-Intestinal Motility. R. R. Durant, Columbus, Ohio.—p. 314.

Effect of Obstruction of Hepatic Veins on Systemic Circulation. J. P. Simonds and W. W. Brandes, Chicago.—p. 320.

Vigor. II. Effect of Castration on Voluntary Activity. R. G. Hoskins, Columbus, Ohio.—p. 324.

*Presence of Secretin in Intestinal Juice. G. W. Volborth, Petrograd.—p. 331.

*Epilepsy. II. Occurrence of Clonic Convulsive Seizures in Animals Deprived of Cerebral Motor Cortex. F. H. Pike and C. A. Elsberg, New York.—p. 337.

Deceptive Effects of Extracts of Suprarenal Cortex. Cardiac Effect Produced by Potassium Content; Intestinal Effects Due to Epinephrin and Choline. O. W. Barlow and T. Sollmann, Cleveland.—p. 343.

Action of Acids on Cell Division with Reference to Permeability to Anions. H. W. Smith, New York.—p. 347.

Effects of Cerebral Destruction on Sexual Behavioor of Rabbits. II. Frontal and Parietal Regions. C. P. Stone, San Francisco.—p. 372.

Effect of Feeding Interrenal Glands.—Marine and his associates have observed a decrease in heat production in eleven of eighteen rabbits following the oral administration of glycerol emulsions of fresh ox interrenal glands. This fall in heat production usually begins in from five to seven days after the feeding has been started and persists in the majority of cases from four to eight days after the feeding is stopped. It is believed these results represent only a glimpse of what may be obtained when the metabolism-depressing substance is sufficiently isolated and concentrated to be introduced into animals parenterally.

Influence of Insulin on Liver Phosphates.—The decrease in the free sugar of the liver, observed with great regularity during the action of insulin, Cori and Goltz assert is not due to the formation of a hexose-phosphoric acid complex in this organ.

Human Power and Its Fuel.—The most significant result of the observations made by Henderson and Haggard on the Yale crew is the conclusive evidence that in whatever proportion fat and sugar are being burned during rest just before exercise, they are burned in nearly the same proportion to produce the energy for doing work or for the recovery process in the muscles. A man can even make an intense exertion, although rather disadvantageously, on a combustion almost entirely of fat from his own body. The advantage of increasing the proportion of sugar is pointed out.

Pseudaffective Medullisuprarenal Secretion.—A preparation is described by Cannon and Britton in which many of the physiologic accompaniments of great emotional excitement can be produced in an acute experiment, without anesthesia, and thus can be readily studied for hours. The denervated heart in this preparation has rates averaging (in fifteen experiments) 222 beats per minute during quiet, and 252 beats per minute during activity. If the suprarenal glands are removed, the rate of the denervated heart averages 156 beats per minute, and is not increased to a noteworthy degree (not more than from four to 8 beats per minute) during activity. The authors draw the inference that associated with physiologic signs of emotional excitement in the pseudaffective state there is greatly increased secretion of adrenin from the suprarenal medulla.

Rôle of Suprarenal Medulla in Pseudaffective Hyperglycemia.—The relation of the suprarenal medulla to hyperglycemia is discussed by Bulatao and Cannon and the weak evidence and the erroneous logic leading to the conclusion that it plays no important rôle, are pointed out. Also the claim that there is pituitary involvement in decerebrate hyperglycemia is questioned, and reasons are advanced for discrediting that claim.

Secretin in Intestinal Juice.—Volborth says that intestinal juice collected from Thiry-Vella fistulas always contains secretin in its sediment. From other digestive juices—saliva, bile and pancreatic juice—no secretin was obtainable. In the gastric juice both of the fundus and the pyloric part a small quantity of secretin is always to be found.

Experimental Epilepsy.—The experiments reported on by Pike and Elsberg show that both tonic and clonic convulsions of the limbs can be produced in cats by absinthe after the excision of one or even of both motor areas, if an interval sufficient for the return of good locomotor reactions is allowed to elapse after the experimental operation. When only one motor area has been destroyed, there may be more tonic extensor spasm on the side which has been deprived of cortical influences, and slight extensor rigidity may be noted for a short period after the convulsive phenomena have ceased. The greater susceptibility of the uninjured hemisphere to absinthe is shown by the rolling of the animal to the side of the uninjured hemisphere during the absinthe convulsions. The motor cortex is unnecessary for those motor stimuli which produce the recurrent muscular contractions that occur in a typical convulsive attack due to absinthe.

American Journal of Psychiatry, Baltimore

4: 407-582 (Jan.) 1925

Psychoneuroses; Problem in Reeducation. A. F. Riggs and W. B. Terhune.—p. 407.

Problem of Psychoneuroses. E. E. Mayer, Pittsburgh.—p. 419.

Mechanism of Psychoneuroses. T. A. Williams, Washington, D. C.—p. 431.

Immigration and Problem of Alien Insane. S. L. Dawes, New York.—p. 449.

Problems of Personality of School Children and Responsibility of Community for Dealing with Them. C. M. Campbell.—p. 471.

Reeducation of Psychoneurotic Girl. J. Taft, Philadelphia.—p. 477.

Emotional Problems Seen in Superior Child. M. E. Kenworthy, New York.—p. 489.

Childhood Inadequacy in Relation to Internal Glandular System. W. Timme.—p. 499.

Resistant Behavior of Children. D. M. Levy.—p. 503.

*One Hundred and Two Ventricular Fluids in Cases of Brain Tumor. B. J. Alpers, Philadelphia.—p. 509.

Dr. Lundholm on "Creative Imagination." M. Prince.—p. 521.

Mental Hospital in "Fabulous Forties." E. D. Bond, Philadelphia.—p. 527.

Social Significance of Huntington's Chorea. E. M. Hughes, Kalamazoo, Mich.—p. 537.

Examination of Ventricular Fluid in Brain Tumor.—In 102 determinations on ventricular fluids Alpers was able to make a diagnosis of brain tumor from the laboratory findings alone in forty-six instances, or in 45 per cent. of the cases. In the other 55 per cent. of the cases no diagnosis of tumor was made from the laboratory findings. Of the forty-six cases in which a diagnosis of tumor was made, this diagnosis was not verified in only five instances; no tumor being found on operation. In the cases in which a diagnosis of brain tumor was made from the serologic findings, this diagnosis was based in practically every instance on the colloidal gold curve. In one case in which the colloidal gold test was negative, a positive diagnosis of brain tumor was made on the basis of a high cell count and a high total protein content in the fluid. In some cases the reduction in the test was very slight, and in some instances it was quite definite. The region in which the reduction occurred, however, was by no means uniform, and did not occur in the zone usually considered to be the tumor zone—from about the fourth to the eighth dilutions—with any degree of uniformity. In fact, the number of cases in which the reduction took place in this particular zone were very few. Most of the cases showed a reduction in the syphilitic or tabetic zones, that is, in the first four or five dilutions, or in the third to the sixth or seventh dilutions. Alpers concludes, therefore, that there was no definite curve which was indicative of brain tumor, and no zone which was particularly susceptible to reduction in cases of tumor, but that in a certain number of cases definite reduction of the gold solution results, and from this a diagnosis of brain tumor may be possible.

American Journal of Syphilis, St. Louis

9: 213-412 (April) 1925

*Relative Absorption and Therapeutic Efficiency of Some Bismuth Preparations. L. G. Beinhauer and F. M. Jacob, Pittsburgh.—p. 213.

Generalized Cutaneous Syphilis: Clinical Differentiation. H. Goodman, New York.—p. 225.

Management of Accidents Occurring in Treatment of Syphilis. I. C. Sutton, Hollywood, Calif.—p. 248.

*Clinical and Biochemical Study of Neurosyphilis. L. H. Cornwall and C. N. Myers, New York.—p. 256.

*Acute Purpura Hemorrhagica as Complication in Treatment of Syphilis. P. A. O'Leary and H. M. Conner, Rochester, Minn.—p. 262.

*Etiology and Management of Antenatal Syphilis. A. R. Fraser and R. L. Impey, Cape Town, S. Africa.—p. 274.

*Nonspecificity of Luetin Test. D. C. Smith and R. D. Gill, Charlottesville, Va.—p. 292.

Spontaneous Precipitation Test for Cerebrospinal Syphilis. A. Khan, Brooklyn.

Standardized Method of Preparing Colloidal Gold Solution. M. J. Breuer, Lincoln, Neb.—p. 307.

*Unusual Divergence in Results Obtained with Plain and Cholesterinized Antigens in Complement Fixation Test for Syphilis. R. Gilbert and V. Langworthy, Albany, N. Y.—p. 310.

*Present Status of Kolmer's Complement Fixation Test for Syphilis as Established by Critical Comparison with Numerous Other Methods. R. A. Kilduffe, Atlantic City, N. J.—p. 318.

Comparison of Four Hour and Overnight (15 Hour) Primary Ice Box Incubation in 1,200 Wassermann Tests with Clinical Analysis of Cases. B. S. Kline, H. S. Applebaum and M. A. Lundagen, Cleveland.—p. 345.

*Kahn Test as Aid in Diagnosis of Syphilis. K. T. Redfield, Roanoke, Va. —p. 354.

Sixteen Hundred and Fifty Routine Wassermann Tests. F. Epplen, Spokane, Wash.—p. 360.

Bismuth Preparations in Syphilis.—Beinhauer and Jacob hold that bismuth is an active antisyphilitic drug. Its effect on clinical manifestations is at least as rapid as that of mercury. Its effect on persistent Wassermann reactions is more marked than that of the usual drugs used. All preparations are painless. With quickly absorbable drugs, rapid toxic effects were noted and with slowly absorbable drugs cumulative action must be kept in mind. The therapeutic efficiency of all preparations studied varied but slightly even though the absorption rate varied greatly.

Arsenic Content of Liver and Spleen After Arsphenamin Administration.—The arsenic content of the liver, spleen and kidneys was determined by Cornwall and Myers in a series of rabbits at intervals of from one to ninety-six hours following the intravenous administration of silver arsphenamin. Larger quantities of the drug were fixed by the spleen than by the liver or kidneys. After four days the amount of arsenic in the spleen was twelve times as great as that in the liver.

Toxic Purpura Caused by Sulpharsphenamin.—Two cases of toxic purpura following sulpharsphenamin are reported by O'Leary and Conner. That neo-arsphenamin is the most frequent cause of this complication is also emphasized. The opinions of various authors as to the cause of the hemorrhagic diseases following the intravenous injection of neoarsphenamin are given. No deductions are made from the accumulated evidence. Purpura of the hemorrhagic type may be noted as a complication of the intramuscular or intravenous use of sulpharsphenamin.

Antenatal Syphilis.—Fraser and Impey stress the fact that antenatal antisyphilitic treatment of the pregnant woman should result in the birth of a healthy infant, and that if kept under observation, and, if necessary, treated, the infant should develop into healthy adolescence. The problem of antenatal syphilis thus resolves itself into an unalterable dogma that every syphilitic expectant mother must be given the advantage of preventive treatment in view of the possible death or infection of her child in utero.

Nonspecificity of Luetin Test.—Smith and Gill state emphatically that the luetin test is not specific for syphilis, hence the reaction is not a reliable diagnostic procedure.

Divergence of Complement Fixation Reactions.—Gilbert and Langworthy report eleven cases in which the blood serum gave a marked reaction with plain alcoholic antigen but no reaction with cholesterinized antigen. In only four of these cases had a diagnosis of syphilis been made.

Kolmer's Complement Fixation Tests.—Kilduffe states that a critical comparison of Kolmer's complement fixation test for syphilis in 68,052 tests by numerous workers conclusively demonstrates its specificity, sensitivity, freedom from false positive reactions and anticomplementary reactions, and its general superiority and suitability as a standard test for general adoption.

Kahn Test for Syphilis.—Approximately 29,000 cases in which the Kahn reaction was run in conjunction with the Wassermann test have been reviewed by Redfield. The need for a test possessing fewer sources of error than the Wassermann reaction has been felt for some time, with the need for a test of high specificity. The Kahn reaction seems to fulfill these conditions. In the cases reviewed there were fewer false reactions and the Kahn test has consistently appeared more delicate, especially in early cases, and in cases following treatment.

American Review of Tuberculosis, Baltimore

11: 175-274 (May) 1925

*Chronic Tuberculous Meningitis Simulating Brain Tumor. L. R. Whitaker, Boston.—p. 175.

*Tuberculous Meningitis in Children. B. S. Herben and M. A. Asserson, New York.—p. 184.

*Experimental Tuberculous Meningitis; Superinfection of Meninges in Rabbits. W. B. Soper and M. Dworski, Saranac Lake, New York. —p. 200.

*Influence of Hypercholesterolinemia on Experimental Tuberculosis of Rabbit. R. H. Jaffe and S. A. Levinson, Chicago.—p. 217.

Experimental Tuberculosis in Rats on Varied Diets. Fat and Vitamin Factors. L. B. Lange, Baltimore.—p. 241.

*Virulence of Saranac Laboratory R1 Strain of Tubercle Bacilli. G. B. Webb, C. T. Ryder and C. H. Boissevain, Colorado Springs, Colo. —p. 247.

*Calcium Content of Blood of Normal and Tuberculous Subjects. P. B. Matz, Legion, Texas.—p. 250.

Chronic Tuberculous Meningitis Simulating Brain Tumor.—The case reported by Whitaker is one of tuberculous meningitis running a mild course of sixteen weeks' duration, with symptoms very closely resembling those of tumor at the left cerebellopontile angle. At operation a small mass of tissue removed from the cerebellum at the left cerebellopontile angle showed miliary tubercles of recent origin. Necropsy showed a generalized miliary tuberculosis, with small sclerosed tubercles scattered throughout the pia mater and brain substance, and several small hemorrhages in the white matter at the base of the brain, the origin of which is unexplained, but which, judging from the perivascular location of many tubercles, may have been due to erosion through vessel walls.

Tuberculous Meningitis in Children.—Herben and Asserson made a very careful analysis of all the circumstances and facts connected with a series of 135 cases of tuberculous meningitis in children. In almost all of these cases the cause of the disease was the human type of tubercle bacillus derived through the child's contact with persons suffering from active tuberculosis. This form of infection is most prevalent in the least sanitary and most congested districts, and tenement houses present a most formidable aspect among etiologic factors. The evidence is predominantly against milk infection as a cause of tuberculous meningitis in New York City. Otitis media and acute infectious diseases, especially measles, pneumonia and whooping cough in children in contact with active tuberculosis, carry a peculiar menace. About 9 per cent. of these 135 cases were preceded by tonsillectomy, unassociated with any other disease. Sex is not an important factor, males being only slightly in preponderance. The highest mortality from tuberculous meningitis occurred in young children, the greatest number of cases in a single age period developing in children from 1 to 2 years of age. In terms of absolute numbers only, outside of the American stock, there was more tuberculous meningitis among the Italians than in other racial groups. While this study verifies the accepted view of the great prevalence of tuberculous meningitis in the spring, this disease among the Jewish and Negro races reached its peak in midsummer. In forty-seven specimens of spinal fluid showing tubercle bacilli, the latter were bovine in type in only three instances.

Experimental Tuberculous Meningitis.—The most striking result of the experiments made by Soper and Dworski is the fact that tuberculous infection of the meninges, always regarded as peculiarly and almost uniformly fatal, obeys, in experimental animals at least, the same laws as do the peritoneum, pleura and various organs. The thirty odd authentic cases in the literature of man's recovery from tuberculous meningitis may here find confirmation, and, in so far as animal experimentation may be applied to human beings, it is probable that much more human tuberculous meningitis would recover were it not so often the dominant manifestation of a general miliary disease. Also, the clinically interesting surmise presents itself that the ordinary human case of advanced tuberculosis may well undergo slight infections of the meninges from time to time, enough to cause headache and suspicions of meningitis, but not enough to warrant lumbar puncture, and ultimately adjudged as not being meningitis through the very fact that the animals recovered.

Hypercholesterolemia and Experimental Tuberculosis.—The fact emphasized by Jaffe and Levinson is that the feeding of a large amount of oil, of cholesterol and oil, and of egg yolk does not render animals more resistant to tuberculosis. In spite of gaining weight and of an increase in the fat deposits, the animals that had received the lipoids did develop a pronounced tuberculosis. The value of diets rich in fat in the treatment of tuberculosis has often been discussed.

Virulence of Tubercle Bacilli.—Webb, Ryder and Boissevain call attention to the fact that a strain of tubercle bacilli which has appeared to be of constantly low virulence may in some cases cause progressive fatal tuberculosis. The bacilli recovered from such cases may be more virulent than the original strain, though less so than average strains. The bearing of these facts on any method of vaccination which employs living attenuated bacilli is obvious.

Blood Calcium in Tuberculosis.—Observations, made by Matz on the blood of both normal and tuberculous subjects show that there is very little variation in the calcium content of the serum. Ingestion of a number of diets with a varied calcium content, as well as the ingestion of inorganic calcium salts in both normal and tuberculous subjects, resulted in an increase of the blood calcium concentration. Furthermore, the ingestion of cod liver oil caused a still greater increase of the blood calcium than was obtained after the ingestion of food or calcium salts alone. Inasmuch as the arrest of a tuberculous process is accompanied by a calcification in and around the tubercle, and the calcium is derived from the blood, it would seem that any system of therapeusis in tuberculosis which results in a state of calcium saturation of the blood is conducive to calcification and the healing of tubercle. It is therefore believed that an important feature in the treatment of tuberculosis would be a diet with an excessive calcium content, together with the administration of inorganic calcium salts and cod liver oil. Observations were also made by Matz on the relationship of the coagulation time to the calcium content of the blood, and it was found that the higher the blood calcium content, the shorter the coagulation time. Furthermore, it was noted that the ingestion of inorganic calcium salts resulted in a decrease of the coagulation time. It therefore follows that cases of pulmonary hemorrhage, in which there is an increase of the coagulation time, would be benefited materially by such therapy. Inasmuch as these studies show that the oral administration of calcium salts is followed by a rapid rise of the blood calcium, it would appear that indiscriminate intravenous injections of these salts are unnecessary.

Archives of Internal Medicine, Chicago

35: 537-668 (May 15) 1925

*Effect of Ultraviolet Light, Vaccines, Turpentine, Neo-Arsphenamine and Autoblood Injections on Enzymes of Blood and Skin. J. F. Schamberg and H. Brown, Philadelphia.—p. 537.
Pathologic Changes Occurring in White Rats Raised on Diets Deficient in Vitamin. A. I. A. Manville, Portland, Ore.—p. 549.
Respiratory Organs in Health and Disease. XVIII. Vital Capacity of Lungs in Chronic Fibrous Pleurisy, Healed Empyema and Pulmonary Tuberculosis. J. A. Myers and C. H. Rice, Minneapolis.—p. 557.
*Nephrosis. J. Kaufmann and E. Mason, Montreal.—p. 561.
*Excretion of Organic Acids After Pneumonia. S. W. Clausen, St. Louis.—p. 571.
Alkaline Tide in Achlorhydria. R. S. Hubbard and S. A. Munford, Clifton Springs, N. Y.—p. 576.
Simultaneous Determinations of Gastric Acidity and Alkaline Tide in Urine. R. S. Hubbard and E. G. Allen, Clifton Springs, N. Y.—p. 586.
*Atypical Case of Splenomegaly. I. Treiger, Chicago.—p. 594.
*Mechanism of Reaction of Nonspecific Protein Agents in Treatment of Disease. I. Influence of Various Agents on Temperature and Leukocyte Counts in Normal Persons and in Rabbits. C. Y. Ling, Philadelphia.—p. 598.
Transient Change in Auriculoventricular Condition Following Injection of Histamin. H. Hashimoto, Rochester, Minn.—p. 609.
Measurement of Body Surface in Men and Women. R. Faillie, Paris, France.—p. 626.
Blood Volume. II. Comparison Between Total Blood Volumes Determined by Plasma Volume Methods and by New Corpuscle Volume Method. W. Ashby, Rochester, Minn.—p. 632.
Id. III. Effects of Transfusion. W. Ashby, Rochester, Minn.—p. 641.
*Anatomic Findings in Essential Hypertension. A. M. Fishberg, New York.—p. 650.

Effect of Ultraviolet Light on Blood.—Summarizing their findings, Schamberg and Brown state that injections of vaccines, turpentine and autoblood appear to increase the lipase and protease in the blood, while huge doses of neoarsphenamin and small doses of distilled water tend to decrease them. Ultraviolet light depresses the lipase and stimulates the protease.

Nature of Nephrosis.—Kaufmann and Mason believe that nephrosis, as applied to the kidneys, is an early manifestation of a general systemic cellular degenerative process of unknown origin. The evidence indicates that the true nephrotic kidney progresses into the secondary contracted type as a result of an organizing process of the degenerated cells, and not as a primary inflammatory entity. The pathologic findings, in the different cases, vary according to the stage in the disease at which death occurs.

Excretion of Organic Acids After Pneumonia.—Clausen found in ten cases examined that large quantities of organic acids are excreted in the urine after the crisis in pneumonia. The period of maximum excretion corresponds to the period of resolution. The larger part of the organic acids excreted during resolution in pneumonia is insoluble in ether.

Atypical Case of Splenomegaly.—A woman, aged 60, who had had typhoid fever at 10 years, and eclampsia at 31, nineteen years ago received a diagnosis of enlarged spleen. The findings elicited by Treiger were a greatly enlarged spleen and liver. The blood findings were anemia and leukopenia until a few months ago, when leukocytosis, with myeloid changes, appeared. The course of the disease was divided into the three stages, splenic, hepatic and myeloid; the first stage lasted over a period of twenty years, the second over a period of a few years, and the last has been in evidence for nine months.

Reaction of Nonspecific Protein Agents.—All the agents used by Ling, including distilled water, autoserum, horse serum, certified milk, market milk, crotalin, peptone and typhoid vaccine, raised the temperature in normal persons or rabbits from 0.5 to 2.4 F., sometime within or about four hours after administration. The most decided rise is produced by typhoid vaccine, peptone, market milk and autoserum, named in the order of their effectiveness.

Anatomic Findings in Hypertension.—In seventy-two cases of essential hypertension coming to necropsy, lesions of the terminal arterioles (arteriolosclerosis) were invariably present. In every instance, the minute arterioles of the kidney (vasa afferentia and interlobulares) were affected. The terminal arterioles of the skin, skeletal muscles, myocardium, lungs, gastro-intestinal tract and thyroid were very rarely involved and then to only an insignificant extent. The view that hypertension is due to the statically increased resistance offered by organic lesions of the arterioles, Fishberg says is untenable. A true generalized arteriolosclerosis does not exist in association with essential hypertension and, therefore, cannot be the cause of the latter. The anatomic changes in the kidney cannot be reconciled with the theory that essential hypertension is due to a disorder of renal function. Only five of the seventy-two cases had renal insufficiency.

Archives of Otolaryngology, Chicago

1: 473-586 (May) 1925

*Blood Calcium in Undifferentiated Deafness. S. J. Kopetzky and R. Almour, New York.—p. 473.
*Lateral Sinus Thrombosis Without Elevation of Temperature. J. W. Holderman, Chicago.—p. 488.
*Micrococcus Pharyngitidis Siccae; Case of Septicemia. M. A. Blandenhorn and M. K. King, Cleveland.—p. 498.
*Perforation of Faucial Pillars; Case. E. H. Cambell, Philadelphia.—p. 503.
*Direct Blood Stream Infection Through Tonsils. M. Tanaka and S. J. Crowe, Baltimore.—p. 510.
Rabbit Rib in Bronchus of Infant; Bronchoscopy and Recovery. E. J. Patterson, Pittsburgh.—p. 521.
Tests of Hearing of Five Hundred Average Ears by Audiometer No. 2-A. D. W. Drury, Boston.—p. 524.
Lamb's Lung Manikin for Bronchoscopic Study and Practice. M. J. Mandelbaum, New York.—p. 533.
*Abnormal Ear Conditions in Patients with Mental Diseases. G. B. M. Free, Danville, Pa.—p. 582.

Blood Calcium in Undifferentiated Deafness.—Assuming, as a basis for study, that certain generalized diseases, as well as metabolic disturbances, are capable of causing a reduction in hearing, a study of the blood chemistry was undertaken by Kopetzky and Almour, in a consecutive series of cases of deafness with the idea of determining what chemical changes in the blood were associated with the loss of acoustic function. Conversely, there seemed a possibility that it might be possible to correlate certain clinical types of deafness with definite changes in the blood chemistry and so determine accurately the cause of the interference with hearing. Of the twenty patients examined, fourteen showed a diminution in the calcium content of the blood. In ten, a clinical diagnosis of otosclerosis had been made. The authors regard this alteration of the calcium content in blood a strong corroborative evidence of the presence of otosclerosis in a patient who presents a loss of hearing clinically and a history of deafness in one or more blood relatives.

Lateral Sinus Thrombosis Without Fever.—A critical summary made by Holderman shows that of thirty-one cases of afebrile lateral sinus thrombosis, fourteen complicated acute middle ear disease; fourteen, chronic middle ear disease, and three were not designated. Fourteen had sinus abscesses, while seventeen had firm or totally organized thrombi; in eleven, headache was present.

Micrococcus Pharyngitidis Septicemia.—The patient whose case is reported by Blandenhorn and King died of a blood infection by *Micrococcus pharyngitidis-siccae*, and because the disease began with a "cold" and later developed into purulent bronchitis, they assume that the respiratory passages were the portal of entry.

Perforation of Faucial Pillars.—Campbell reports a case of perforation of the right faucial pillar which he believes was of inflammatory rather than of congenital origin. The tonsil beneath this opening was small, embedded, closely bound to the pillars by adhesions and with every appearance of having been actively diseased. It seems very possible that the condition could have been caused by the persistent inflammation of the right side of the throat which the child had had seven years previous to examination.

Blood Stream Infection Through Tonsils.—Reconstruction of an infected tonsil by Tanake and Crowe demonstrates very clearly the distribution of the capillaries in the epithelium and that of the large veins around the crypts. The clinical evidence that many of the general systemic disturbances secondary to chronic tonsillitis are due to the localization of bacteria in the affected area is supported by the following facts: (1) The epithelium that lines the crypt in a normal tonsil has a rich capillary blood supply; the large collecting veins that surround each crypt lie just under the basement membrane. (2) A destruction of this epithelium, in whole or in part, is the most common microscopic finding in chronic tonsillitis.

Ear Disease as Cause of Mental Conditions.—Free urges that diseases of the ear should be considered as a definite etiologic factor in the production of certain types of abnormal mental manifestations. Routine examinations of the ear should be made in all patients with mental disease. Such examinations, in many instances, will reveal conditions which, if removed, will at least render the patient more comfortable, and in some cases will bring about a cessation of the mental symptoms.

Archives of Surgery, Chicago

10: 813-1047 (May) 1925

*Treatment of Infections and Infectious Diseases with Mercurochrome-220 Soluble. H. H. Young, J. H. Hill and W. W. Scott, Baltimore.—p. 813.
Effect of Unit Record System and Improved Organization on Hospital Economy and Efficiency. M. W. Openchowski, New York.—p. 925.
Exhaustion. VIII. Anaphylaxis; Pregnancy. G. W. Crile, Cleveland.—p. 935.
*Hypernephroma and Carcinoma of Kidney: Comparative Study. D. K. Rose, St. Louis.—p. 943.
Separation of Upper Epiphysis of Radius. A. H. Montgomery, Chicago.—p. 961.
*Treatment of Epiphyseal Separation of Lower End of Radius. I. Zadek, New York.—p. 969.
Deposition of Calcium Phosphate and Calcium Carbonate in Bone and in Areas of Calcification. J. C. Watt, Toronto.—p. 983.
*Embolectomy; Case. A. M. Dickinson, Albany, N. Y.—p. 991.
Abnormal Arteriovenous Communications, Acquired and Congenital. II. Origin and Nature of Arteriovenous Aneurysms, Cirsoid Aneurysms and Simple Angiomas. M. R. Reid, Cincinnati.—p. 996.
Twenty-Sixth Report of Progress in Orthopedic Surgery. R. B. Osgood et al, Boston.—p. 1010.

Mercurochrome Treatment of Infections.—Young et al. review the work done that led to the discovery of mercurochrome-220 soluble and summarize 210 cases that are said to present many examples of a therapia sterilisans magna. They believe that these cases justify the final assertion that in mercurochrome-220 soluble, intravenously administered, a really remarkable addition to therapeutics may be claimed. It is a drug, the usage of which in a great variety of septic conditions seems justified.

Hypernephroma and Carcinoma of Kidney.—In twelve pathologic specimens, the most recent removed three years ago, Rose says the mortality resulting from hypernephroma was conspicuously lower than that resulting from carcinoma. Kidney tumors arising from suprarenal rests are much less malignant than those arising from tubular epithelium, and the two types can best be differentiated by their gross appearance and histologic structure, rather than by their location in the kidney, their chemistry or conflicting embryologic arguments.

Treatment of Epiphyseal Separation of Lower End of Radius.—Zadek asserts that palmar flexion (about 100 degrees), is a simple, direct and mechanically efficient method of treatment of epiphyseal separations of the lower end of the radius. This reduction should be made under anesthesia and the attitude maintained by a plaster-of-Paris cast for two and a half or three weeks. The fingers should be left free and the patient should be able to move them readily, though the attitude of palmar flexion makes it impossible for him to make a fist. After the removal of the plaster cast, there is no difficulty in forcing the hand into dorsal flexion.

Embolectomy on Brachial Artery.—Dickinson reports a case of embolism of the right brachial artery in which the embolus was removed surgically. Gangrene of the arm ensued, followed by the death of the patient on the third day after operation apparently from acute dilatation of the heart.

Boston Medical and Surgical Journal

192: 939-986 (May 14) 1925

*Administration of Dochez's Antiscarlatinal Serum (Scarlatinal Antitoxin) Intravenously. C. L. Thenebe, Hartford, Conn.—p. 939.
Convalescence. VIII. Convalescent Work in U. S. Army. J. Bryant, Boston.—p. 943.
*Bronchial Gland Tuberculosis. J. B. Hawes and E. Friedman, Boston.—p. 954.
Chronic Bronchitis. E. O. Otis.—p. 957.
Common Cold. G. B. Rice, Boston.—p. 959.
*Two Unusual Cases of Foreign Body. I. J. Walker.—p. 962.
Distribution of Insulin. E. R. Kelley, Boston.—p. 964.

Dochez Serum in Scarlet Fever.—Observations made by Thenebe confirm the clinical results obtained by F. J. Blake, in that antiscarlatinal serum is a valuable therapeutic agent in the treatment of scarlet fever. He says that the toxemia accompanying scarlet fever can be combated effectually by the administration of serum intravenously in smaller doses than are usually administered intramuscularly. The intravenous administration of serum affords maximum immediate concentration of antitoxin in the blood stream; its use being indicated in the moderate to severely toxic and septicemic types of diseases. It has been used without undesirable and untoward effects and therefore would be a safe procedure. The incidence of complications may be lessened by its administration, more than by any other present method of procedure.

Bronchial Gland Tuberculosis.—Hawes and Friedman believe that there is urgent need of further study as to the effect of acute nontuberculous respiratory tract infections on the hilus glands and tissues from both the clinical and roentgenologic aspects. They are of the opinion that both d'Espine's sign and the Eustace-Smith sign are of comparatively little value; further, they believe that so-called parasternal dullness is a point of no value and that paravertebral or interscapular dullness are of value chiefly in the hands of those very few whose skill in percussion is highly developed. They agree that in the case of children who are actually sick with tuberculosis and are not merely infected contact cases paravertebral dulness may be of real value in diagnosis. The whole subject of the diagnosis of bronchial gland or hilus tuberculosis is still in a stage of doubt and uncertainty. "Signs" at the best are unreliable and roentgen ray evidence at present of little value. Diagnosis should be based on history, exposure, positive Pirquet and constitutional signs and symptoms.

Foreign Bodies in Gastro-Intestinal Tract.—The foreign bodies in Walker's cases were a table fork, a spoon, a sardine can opener, and a crochet needle, the hook of which had been filed away leaving a sharp joint: two small underwear buttons, a brass strongsuit eyelet about the size of a 25 cent piece, and considerable shredded cloth; and a safety razor blade.

California and Western Medicine, San Francisco

23: 561-672 (May) 1925

Beginnings of California's Medical History. G. D. Lyman, San Francisco.—p. 561.
Historical Collection of Lane Medical Library. L. Ophüls, San Francisco.—p. 576.
History of Development of Women in Medicine in California. A. Brown, San Francisco.—p. 579.
Correspondence Relating to Introduction of Vaccination into America. W. C. Alvarez, San Francisco.—p. 582.
Historical Incidents in Development of Operation for Cataract. H. Barkan, San Francisco.—p. 585.
California Pandemic of 1833. E. W. Twitchell, San Francisco.—p. 592.
Democedes of Crotona. W. F. Cheney, San Francisco.—p. 593.
California's Medical Practice Acts. F. F. Gundrum, Sacramento.—p. 595.
"Chiropractic Fountain Head." A. W. Meyer, Stanford University, Calif.—p. 610.

Canadian Medical Association Journal, Montreal

15: 461-580 (May) 1925

Medical Witness. T. G. Mathers, Manitoba.—p. 461.
Cancer Prophylaxis. W. W. Chipman, Montreal.—p. 467.
Periarteritis Nodosa. C. P. Howard, Montreal.—p. 473.
Problem of Fundamental Action of Insulin. J. J. R. Macleod, Toronto.—p. 476.
Colles' Fracture. A. Gibson, Manitoba.—p. 479.
Forty-Five Cases of Anterior Poliomyelitis. F. B. Walsh, Estevan, Sask.—p. 482.
Roentgen-Ray Findings in Primary Carcinoma of Lung. H. M. Tovell, Toronto.—p. 485.
Newer Methods for Determination of Pregnancy. R. Mitchell, Winnipeg.—p. 489.
Pyelitis of Pregnancy; Thirteen Cases. J. C. McClelland, Toronto.—p. 494.
*Extreme Sensitization in Infants to Cow's Milk Protein. F. F. Tisdall and I. H. Erb, Toronto.—p. 497.
Multiple Myelomata; Case. F. H. Mewburn and H. M. Vango, Edmonton, Ala.—p. 502.
Industrial Diseases in Ontario. A. R. Kiddell, Toronto.—p. 510.
Industrial Toxications Under Workmen's Compensation Act. W. C. Givens, Toronto.—p. 512.
Use of Lipiodol in Diagnosis of Cord Tumor. C. K. Russel, Montreal.—p. 514.
*Fatal Hemorrhage from Duodenal Ulcer, Associated with Toxic Adenoma of Thyroid. P. G. Silver, Montreal.—p. 517.
Case of Internal Hernia of Purely Pathologic Origin. W. L. Barlow and J. O. Fraser, Montreal.—p. 518.
*Case of Diabetic Coma Treated with Dioxyacetone, with Recovery. I. M. Rabinowitch, Montreal.—p. 520.
Case of Sprue. A. H. Gordon, Montreal.—p. 522.
Tuberculosis in Children. R. R. Struthers.—p. 525.
Artificial Feeding of Normal Infants with Cows' Milk. R. R. Struthers, Montreal.—p. 528.

Extreme Sensitization to Cow's Milk Protein.—Two cases of extreme sensitization to cow's milk protein are reported by Tisdall and Erb. The diagnosis of this condition usually presents little difficulty on account of the striking and unusual symptoms which appear directly after the first administration of cow's milk. The symptoms usually are, refusal of the infant to take cow's milk after a few drops have been swallowed, followed by pain as evidenced by crying, swelling of the skin and mucous membranes wherever touched by the milk, and symptoms of shock as evidenced by rapid shallow breathing and cyanosis. Sometimes a general urticaria of the skin appears. The treatment consists in desensitizing the infant by giving minute doses of cow's milk which are gradually increased until the necessary amount for the nutrition of the child is administered. To accomplish this usually required three or four months' time.

Duodenal Ulcer with Toxic Adenoma of Thyroid.—The first symptom of a duodenal ulcer in the case cited by Silver was a fatal hemorrhage. That the duodenal ulcer in this case could have any direct relation to the thyroid condition, for which the patient sought relief, does not seem probable.

Dioxyacetone for Diabetic Coma.—One hour after administration of dioxyacetone, in Rabinowitch's case there was a decrease in the degree of acidosis. The plasma carbon dioxid combining power was little altered. In spite of the administration of 18 gm. of dioxyacetone during that one hour period, the degree of hyperglycemia had not increased. Clinically, there was practically no change noted. At the end of the second hour, there was very little further change in the excretion of either acid or ammonia. The plasma carbon dioxid showed a definite, though slight increase. The blood sugar had not increased though 24 gm. of dioxyacetone were given during that hour. Clinically the patient appeared to be a little brighter. The respirations were not so labored. The acetone odor of the breath was still marked. Following this period there was a definite, though slight, decrease in the degree of hyperglycemia. The degree of acidosis had gradually decreased. At the end of the twelve hour period the patient was mentally clear and gave an intelligent account of her illness. The respirations were only slightly increased. The patient stated she felt well. The breath still had a slight odor of acetone, and the urine gave a positive ferric chlorid reaction, though of much less intensity. The rate of excretion of sugar had altered only slightly; there was a decrease in spite of the fact that 68 gm. of dioxyacetone were given during the period. Only traces of dioxyacetone were detected in the urine.

Endocrinology, Los Angeles

9: 109-180 (March-April) 1925

Is There an Antagonism Between Male and Female Sex Endocrine Gland? A. Lipschutz, Tartu, Estonia.—p. 109.
*Pathology of Hypophysis. V. Abscess. J. P. Simonds, Chicago.—p. 117.
*Case of Pseudohermaphrodite. G. L. Rohdenburg, New York.—p. 122.
*Effect of Feeding Fowls on Thyroid. B. Zavadovsky, Moscow.—p. 125.
*Incidence of Goiter Among School Children. D. C. Hall, C. M. Hofrichter and G. J. Mohr, Seattle, Wash.—p. 137.
*Effect of Pituitary Preparations on Nitrogen Metabolism. G. P. Grabfield and A. M. Prentiss, Boston.—p. 144.

Abscess of Hypophysis.—Seven new cases of abscess of the hypophysis are reported by Simonds and the mechanisms by which the infection reaches this gland are described. Six of these abscesses were in the anterior lobe, and one was in the posterior lobe. The etiology of the abscess in one case is not clear. No clinical history was obtainable, and the circumstances under which the necropsy was done made a satisfactory examination of the associated pathologic conditions next to impossible. The remaining six cases illustrate the two distinct ways in which abscess of the hypophysis may originate, namely, by the lodgement of mycotic or septic emboli, and by extension from a suppurative inflammation of nearby structures.

Pseudohermaphrodite.—Rohdenburg reports the case of an individual with the external genitals resembling the male and the female and with internal genital organs consisting of a bicornate uterus with a septum, and one gonad, and embryonal testis, a portion of the vas deferens and a spermatic cord.

Effect of Feeding Thyroid Preparations.—Thyroid preparations were administered by Zavadovsky to about sixty fowls. The dosages ranged from minimal to fatal. The symptoms of hyperthyroidism demonstrated were increased excitability, polyphagia, polydipsia and nervous disturbances which varied with the doses. The neuropathologic disturbances included incoordination, convulsions and general stupidity. An effect specific to fowls was observed in the plumage. Larger doses caused a marked loss of feathers. These were replaced by others which were completely colorless or white in varying degrees, depending on dosage. It is concluded that the thyroid gland plays a specific rôle in the regulation of the growth and moulting of feathers and in their pigmentation.

Incidence of Goiter Among School Children.—The findings presented by Hall, Hofrichter and Mohr indicate much earlier age incidence of goiter among school children than has heretofore been noted. The relative incidence among boys as contrasted with girls is likewise much greater than earlier reported. Of 1,654 boys examined, 35.5 per cent. had goiter and 43.4 per cent. of 1,506 girls had goiter.

Effect of Pituitary Preparations on Nitrogen Metabolism.—No effect on the urinary nitrogen excretion or nonprotein nitrogen of the blood was observed by Grabfield and Prentiss as a result of the administration of either pituitary extract (intramuscularly), dried anterior lobe, dried posterior lobe or dried whole gland pituitary (by mouth) to patients on a constant diet.

Iowa State Medical Society Journal, Des Moines

15: 165-224 (April 10) 1925

Modern Treatment of Diphtheria; Method of Preparing Antitoxin. W. L. Bierring, Iowa City.—p. 171.
Medicine and Fundamental Sciences. C. K. Edmunds, Baltimore.—p. 175.
Standardization of Treatment of Fractures of Skull. C. S. Krause, Cedar Rapids.—p. 181.
Fractures of Upper Extremities. P. A. Bendixen, Davenport.—p. 183.
Fractures of Lower Extremities. C. E. Ruth, Des Moines.—p. 186.
Angiomas of Throat. W. J. Foster, Cedar Rapids.—p. 192.
Prevention of Postoperative Intestinal Incompetence. L. Long, Oklahoma City.—p. 195.
Prophylactic Blood Transfusion as Routine Measure in Poor Operative Risks. G. G. Ward, New York.—p. 198.
What General Practitioner Should Know of Radium in Gynecology. G. Gellhorn, St. Louis.—p. 200.
Use of Radium from Surgical Standpoint. P. A. White, Davenport.—p 202.

Journal of Bacteriology, Baltimore

10: 197-313 (May) 1925

Vibrio Cholerae. I. *Fermentation of Carbohydrates and Polyatomic* Alcohols by Vibrio Cholerae. K. Nobechi, Tokyo, Japan.—p. 197.
Reducing Properties of Micro-Organisms; Selenium Compounds. V. E. Levine, Omaha.—p. 217.
Certain Characteristics of Clostridium Chauvei and Clostridium Edematis. J. P. Scott, Kansas City, Mo.—p. 265.

Journal of Comparative Psychology, Baltimore

5: 109-202 (April) 1925

Color Preferences of One Thousand and Six Negroes. F. M. Mercer, Austin, Texas.—p. 109.
Visual Perception and Retinal Mosaic. II. Influence of Eye Movements on Displacement Threshold. H. L. Averill and F. W. Weymouth, Stanford University, Calif.—p. 147.
Copulatory Ability in Male Albino Rat Incurred by Defective Diets. II. Qualitative Deficiency. C. P. Stone, Stanford University, Calif.—p. 177.

Kansas Medical Society Journal, Topeka

25: 131-165 (May) 1925

Restoration of Pancreas. C. F. Menninger, Topeka.—p. 131.
Syphilis and Necessity for Its Control. E. G. Brown, Topeka.—p. 136.
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. P. Downey, Pittsburgh.—p. 142.

Maine Medical Association Journal, Portland

16: 81-99 (May) 1925

Drug Therapy in Cardiovascular Diseases. P. D. White, Boston.—p. 81.
Urinary Bleeding. H. Jameson, Rockland, Me.—p. 84.
Heart Cases with Regard to Prognosis. D. Forest Weeks, Portland.—p. 89.

Medical Journal and Record, New York

121: 521-588 (May 6) 1925

*Intracranial Hemorrhage in New-Born from Obstetrician's Viewpoint. M. L. Brandt, New York.—p. 521.
Correct Conception of Thoracic Empyema and Its Rational Physiologic Treatment. A. L. Soresi, New York.—p. 524.
Effusions Into Knee Joint and Housemaid's Knee. E. H. Smith, San Francisco.—p. 528.
Vasomotor Rhinitis; Eight Cases Reacting to Orris Root. E. M. Robinson, Brooklyn.—p. 529.
Purulent Pericarditis in Childhood. A. C. Wood and W. N. Bradley, Philadelphia.—p. 531.
Osgood-Schlatter Disease. J. Grossman, New York.—p. 534.
Bleeding Nipple. P. Tapie, Bordeaux, France.—p. 537.
Diagnosis of Acute Conditions of Brain. J. V. Haberman, New York.—p. 538.
Therapeutic Possibilities of Small Doses of Roentgen Rays. C. F. Stokes, New York.—p. 543.
Treatment of Pneumonia by Diathermy. W. B. Snow, New York.—p. 547.
Electrotherapeutics in Urology. V. C. Pedersen, New York.—p. 551.
Electrotherapy in Paralysis Following Peripheral Nerve Lesions and Poliomyelitis. R. Kovacs, New York.—p. 557.
Tonsil and Roentgen Ray. M. V. Leof, Philadelphia.—p. 561.
Hepatic and Cardiac Syndrome. W. Martin, Atlantic City, N. J.—p. 563.
Tryparsamide in Neurosyphilis. H. P. Hyder, Washington, D. C.—p. 567.

Intracranial Hemorrhage in New-Born.—During 1924 there were born in the Bronx 15,160 babies. Of this number, 629, or 4.1 per cent., were stillborn and 469, or 3.1 per cent., died during the first month of life. Brandt says that intracranial lesions, mild and severe, develop in the course of both normal and abnormal labors. Evidence of such injuries can be discovered at necropsy in approximately one half of all infants stillborn or dying within the first few days of life. But only in half of these cases was this injury the cause of death. In the other half traumatic lesions, chiefly tentorial lacerations without or with slight hemorrhage, represent but incidental findings.

Medicine, Baltimore

4: 1-250 (Feb.-May) 1925

Lead Poisoning. J. C. Aub, L. T. Fairhall, A. S. Minot and P. Reznikoff.—p. 1.

Texas State Journal of Medicine, Fort Worth

20: 637-702 (April) 1925

Mysticism and Fatalism in Treatment of Heart Disease. K. H. Beall, Fort Worth.—p. 645.
Surgical Goiters. G. D. Mahon, Dallas.—p. 648.
Removal of Metallic Foreign Bodies from Lung and from Esophagus; Two Cases. G. S. McReynolds, Temple.—p. 650.
Alternating Squint. E. L. Goar and W. Ralston, Houston.—p. 651.
Bronchoscopy and Esophagoscopy in Relation to General Practice. S. Israel, Houston.—p. 654.
Multiple Serositis; Antemortem Diagnostic Procedure. J. R. Lehmann, Dallas.—p. 655.
Cesarean Section; Indications. M. L. Wilbanks, Greenville.—p. 658.
Torsion of Great Omentum; Case. J. W. Nixon, Jr., San Antonio.—p. 659.

21: 1-40 (May) 1925

Intracranial Hemorrhage of New-Born. W. L. Allison, Fort Worth.—p. 8.
Intracranial Complications of Ear and Accessory Nasal Sinus Affections. W. O. Ott, Fort Worth.—p. 12.
Ligature of Common Iliac Artery: Two Cases. J. E. Thompson, Galveston.—p. 15.
Combined Methods of Treating Malignancies. D. Jackson, San Antonio.—p. 22.
*Mercurochrome in Surgical Practice. J. S. Tomkies, Dallas.—p. 24.
*Pernicious Anemia. J. G. Burns, Cuero and C. F. Dixon, Rochester, Minn.—p. 26.

Mercurochrome in Pyelitis and Salpingitis.—Tomkies has treated about fifty cases with mercurochrome and has obtained the best results in cases of acute pyelitis, salpingitis and bilateral nephrolithiasis with infection.

Pernicious Anemia.—Burn and Dixon advocate intestinal drainage in the treatment of pernicious anemia. Because drainage above the terminal ileum is incompatible with prolonged life; because they have found evidence of cecal stasis in some patients observed, and because of its technical simplicity, they decided that drainage should be instituted in the region of the ileocecal coil. Another reason for choosing this site was on account of the high absorbative power of the right half of the colon. Ileostomy has been performed in at least seven cases. The results have been encouraging.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 953-994 (May 23) 1925

Importance of Exploratory Incision in Cancer of Breast. D. C. L. Fitzwilliams.—p. 953.
*Causation and Prevention of Rickets. A. Webster and L. Hill.—p. 956.
Two Diseases Due to Fashion in Clothing: Chlorosis and Chronic Erythema of Legs. F. P. Weber.—p. 960.
Treatment of Hay-Fever. F. Coke.—p. 962.
*Rectal Injection of Ether in Whooping Cough. C. Elgood.—p. 963.
Hemoglobinuria Following Malarial Treatment of Quaternary Syphilis. G. de M. Rudolf.—p. 964.
Roentgen Rays in Diagnosis of Organic Diseases of Colon. A. F. Hurst. —p. 965.
Parkinsonism Together with "Apache Type" in Lethargic Encephalitis. A. Hancock.—p. 966.
Case of Hydatidiform Mole. N. Wilson.—p. 966.
Congenital Familial Jaundice. J. K. Dunlop.—p. 966.
Melena Neonatorum Treated by Injection of Paternal Blood: Recovery. J. C. Morrison.—p. 967.
Mitral Stenosis in Pregnancy: Cesarean Section. J. H. Tonking.—p. 967.
Retropharyngeal Abscess: Secondary Hemorrhage. P. K. Liang, C. H. Lei and P. T. Liang.—p. 967.

Cause of Rickets.—Webster and Hill present evidence which strongly suggests that the primary cause of rickets is a low calcium and inorganic phosphate level in the circulating blood, and that this is due to defective absorption from the intestinal canal. Experiments on rats yielded results which may be summarized as follows: Confinement per se was not responsible for the development of the rickets. Exercise and open air but absence of direct sunlight have no specific antirachitic effect on young rats. A minimum exposure of two hours to bright sun or sky-shine five days a week was necessary to protect rats from rickets under the severe experimental conditions adopted in this research. Ultraviolet light is specific in its antirachitic effect. Rickets is not produced in rats fed on a normal diet and subjected to a high temperature for twenty-eight days. Providing the diet is adequate, conditions simulating the tropics at their worst, but without any ultraviolet light, will not give rise to rickets in young rats. Provided an animal is supplied with food just sufficient to maintain life and a little growth and a bare minimum of the bone forming elements calcium and phosphorus, then, if ultraviolet light be supplied in adequate amount, rickets will not develop however unfavorable the animal's environment may be. Sulphur fails to prevent rickets as often as it succeeds. Magnesium sulphate, arsenic and thymol proved to be useless as antirachitic agents. The authors cite data that strongly support the view that the antirachitic body in cod liver oil and radiant energy in the form of ultraviolet light both act in the same way in preventing rickets, and that this mode of action is a facilitation of absorption of calcium and phosphorus from the intestine into the blood stream.

Rectal Injection of Ether in Whooping Cough.—Elgood says that drugs still hold their place in the treatment of whooping cough. Of these belladonna seems to be the most useful. Ether will check the disease completely in 25 per cent., fail completely in 25 per cent., and be followed by considerable improvement in 50 per cent. Ether neither causes nor prevents complicating bronchitis; bronchitis already present is not a contraindication to its use. The method of administration seems to be of no importance, provided the dose is large enough. Elgood injects from 5 to 10 minims intragluteally or 30 minims in olive oil by enema.

1: 995-1026 (May 30) 1925

Fashions and Fads in Medicine. R. Hutchison.—p. 995.
*Effect of Pituitrin and Insulin on Blood Sugar. R. D. Lawrence and R. F. L. Hewlett.—p. 998.
Treatment of Convergent Concomitant Squint. A. F. Fergus.—p. 1002.
Hypoglycemia: Two Cases. H. S. Pemberton.—p. 1004.
Congenital Cystic Disease of Lungs. S. Smith.—p. 1005.
*Pneumococcal Wound Infection: Two Cases. B. Muir.—p. 1005.
Perforation of Jejunum During an Attack of Lobar Pneumonia: Laparotomy: Recovery. R. Maingot.—p. 1006.
Fracture of Both Patellae by Muscular Action. T. Twistington. Higgins.—p. 1006.

Effect of Pituitary Extract and Insulin on Blood Sugar.—Lawrence and Hewlett found that subcutaneous injection of therapeutic doses of 1 c.c. of posterior lobe extract have no appreciable or constant effect on blood sugar concentration in normal and diabetic persons. These doses markedly antagonize the effect of insulin on blood sugar in both normal and diabetic persons. Experiments with ergotamin show that this antagonism is produced by the mobilization of glucose by pituitary extract. The insulin tolerance of normal persons in the fasting condition is from 15 to 20 units. Much more can be tolerated when insulin is balanced with food. Curious symptoms caused by therapeutic doses of pituitary extract in normal persons are described. Blood sugar experiments in a case of diabetes insipidus are described and their significance is discussed. It is suggested that the pituitary gland, like the thyroid, is one of the most important factors in producing a normal balance between anabolism and catabolism and does so primarily by its effect on glycogenic function and carbohydrate metabolism.

Pneumococcal Wound Infection.—Muir asserts that he could not find a record in the literature of a similar case. His two cases were both "traversing" bullet wounds, and in both the primary infection appeared to be pneumococcal.

Calcutta Medical Journal

21: 363-410 (March) 1925

Complement Fixation Test. B. N. C. Roy.—p. 363.
Vaccine Therapy. N. Banerji.—p. 369.
Electric Ionization in Dermatology. A. Gupta.—p. 378.
Vitamins. A. Roy.—p. 383.

Indian Medical Gazette, Calcutta

60: 197-246 (May) 1925

*Giant Urticaria. H. W. Acton.—p. 197.
Antidiabetic Properties of Cephalandra Indica (Telakucha). R. N. Chopra and J. P. Bose.—p. 201.
Operative Treatment of Intestinal Stasis. H. Hallilay.—p. 202.
*Value of Aldehyde Test in Diagnosis of Kala-Azar. P. Ganguli.—p. 204.
*Treatment of Kala-Azar with Urea Stibamine in Medical Outpatient Department of Medical College Hospital, Calcutta. N. C. Kapur.—p. 206.
Intravenous Anesthesia in Surgical Practice. J. P. Arland.—p. 210.
*Quinin Plus Alkalis in Treatment of Malaria. K. V. Raju.—p. 212.
Choroidal Hemorrhage Following Cataract Extraction. M. M. Cruickshank.—p. 213

Giant Urticaria.—In the treatment of this condition, Acton has been giving 2 minims of a 1:1,000 solution of epinephrin hydrochlorid intramuscularly every day for four or five days, then followed by suprarenalin, 1 gm., and extract thyroideum siccum 0.25 gm. twice a day on an empty stomach for three weeks. This treatment usually enables the patient to return with safety to the particular food to which he was sensitive before treatment. If there is general sensitiveness, it is as well to examine the stools for *E. histolytica* cysts and to examine the size of the liver. Often emetin will cure the amebic infection of the bowel, and at the same time prevent the giant urticaria.

Aldehyd Test in Kala-Azar.—Ganguli holds with those who assert that the value of the aldehyd test is a purely negative one. There was not a single case of kala-azar with a clear history of more than five months' duration, in which spleen puncture showed Leishman-Donovan bodies, that the aldehyde test was negative. Eight suspected cases with clinical symptoms of kala-azar and a kala-azar blood picture were thus investigated.

Urea Stibamine in Kala-Azar.—Kapur has had good results from the use of urea stibamine in cases of kala-azar. The course of treatment for bringing about cure in kala-azar is remarkably short. In some of the cases cure took place in only seven days. In cases of the antimonyl tartrates the course of treatment frequently extends over more than three months. The most striking results with urea stibamine are: (*a*) rapid disappearance of the splenic enlargement; (*b*) rapid subsidence of the fever; (*c*) early disappearance of the leukopenia, and (*d*) the short treatment required for a complete cure.

Quinin and Alkalis in Malaria.—The routine treatment of "fever" at the hospital where Raju works is, first, to administer a saline aperient, and then await the onset of a rigor in order to take blood films for examination, if the patient has given a history of rigors. The treatment is carried out in accordance with the instructions given by Major Sinton, using his alkaline mixture (for an adult: sodium bicarbonate, 60 gm.; sodium citrate, 40 gm., and water to 1 ounce) and his quinin mixture (for an adult: quinin sulphate, 10 gm.; citric acid, 30 gm.; magnesium sulphate, 60 gm., with water to 1 ounce). On the first day four doses of the alkaline mixture, and two of the quinin mixture are given, the latter on each occasion fifteen minutes after the alkaline mixture; for the next four days, three doses a day of the alkaline mixture, followed after a fifteen minutes interval by three doses of the quinin mixture; and for the next two days, two doses of the alkaline mixture, followed after a fifteen minutes interval by two doses of the quinin mixture; the patient taking in all during the week 180 grains quinin sulphate in solution.

Journal of Physiology, London

60: 1-108 (May 21) 1925

Effects of Different Salts on Heat Production of Muscle. E. Sereni.—p. 1.
Influence of Carbon Dioxid Tension in Inspired Air on Carbon Dioxid Tension in Tissues. J. A. Campbell.—p. 20.
Relation in Diuresis Between Volume of Urine and Concentration of Diuretic with Influence of Temperature on It. E. J. Conway.—p. 30.
*Direct Action of Insulin on Fat Metabolism. H. S. Raper and E. C. Smith.—p. 41.
*Hemochromogen Relation of Protein to Properties of Hemoglobin Molecule. M. L. Anson and A. E. Mirsky.—p. 50.
Effect of Pituitrin on Fatty Acid of Liver. R. Coope and E. N. Chamberlain.—p. 69.
*Influence of Spleen in Carbon Monoxid Poisoning. J. Barcroft, C. D. Murray, D. Orahovats, J. Sands and R. Weiss.—p. 79.
*Mechanism of Pancreatic Digestion-Function of Secretin. J. Mellanby.—p. 85.
*Insulin and Pituitrin "Fat Liver." R. Coope.—p. 92.
Maximum Work of Several Muscles of Forearm. J. H. O. Reijs.—p. 95.
Combination of Nitric Oxid with Hemoglobin. M. L. Anson and A. E. Mirsky.—p. 100.
Closed Circuit Heart Lung Preparation. I. Effect of Alterations in Blood Volume. I. de Burgh Daly —p. 103.

Action of Insulin on Fat Metabolism.—The evidence obtained by Raper and Smith does not support the view that fat synthesis in the liver is associated with insulin hypoglycemia (confirming Dudley and Marrian).

Carbon Dioxid Dissociation Curve of Hemoglobin.—A method is described by Anson and Mirsky for obtaining the carbon dioxid dissociation curve of hemochromogen and hemoglobin in dilute or concentrated solutions.

Influence of Spleen on Carbon Monoxid Poisoning.—In an atmosphere which receives a continuous accession of coal gas, guinea-pigs from which the spleens have been removed die sooner than either normal guinea-pigs, those from which omentum has been removed, or those from which one horn of the uterus has been excised.

Enzyme Content of Pancreatic Juice.—The hypothesis is put forward by Mellanby that the enzyme content of pancreatic juice is determined by the vagus nerves, whereas the quantity of bicarbonate solution in which these enzymes are contained is determined by secretin. On this hypothesis, secretin may play a subsidiary part in pancreatic digestion, since it only ensures the presence in the intestine of an optimal reaction for the activity of the pancreatic enzymes.

Effect of Insulin and Pituitary Extract on Liver.—Coope's experiments show that a single dose of insulin given simultaneously with pituitary extract profoundly modifies, and in many cases completely prevents, the effect of pituitary extract on the liver fat.

Lancet, London

1: 1117-1172 (May 30) 1925

*Blood Pressure. R. Lake.—p. 1117.
*Late Rickets and Osteomalacia in Delhi. G. Stapleton.—p. 1119.
Collodial Kaolin. I. Properties. W. J. Pope and R. T. M. Haines.—p. 1123.
Id. II. Absorption of Toxin by Kaolin. J. W. H. Eyre.—p. 1124.
Local Insulin Reactions. R. D. Lawrence.—p. 1125
*Acetylene, Ethylene, Propylene. F. E. Shipway.—p. 1126.

Blood Pressure and Vertigo.—The relation of blood pressure to the treatment and diagnosis of vertigo and tinnitus is discussed by Lake.

Late Rickets and Osteomalacia.—Analysis of seventy-three cases had convinced Stapleton that there is no sharp dividing line clinically between late rickets and osteomalacia cases, but intermediate cases are found showing characteristics of both. The determining cause in the majority of cases is the lack of sunlight and exercise associated with the purdah life.

Acetylene, Ethylene, Propylene.—These anesthetics have been given a trial at Guy's Hospital and report of the results is made by Shipway. While a favorable view has been taken of ethylene, acetylene was discarded after a short trial, and propylene has received as yet insufficient trial to warrant the drawing of definite conclusions. So far results from its use have been good.

Medical Journal of Australia, Sydney

1: 471-498 (May 9) 1925

*Intradermal Reaction in Hydatid Disease; Its Clinical Value. H. R. Dew, C. H. Kellaway and F. E. Williams.—p. 471.
*Alteration in Blood Sugar Values After Intensive Deep Roentgen-Ray Irradiation. H. Flecker and G. Cameron.—p. 478.
Sinsusitis as Source of Disease and Its Effective Treatment. S. Pern.—p. 480.
Tasmanian Sanatorium for Consumptives. F. M. Lovett.—p. 483.

Intradermal Test in Hydatid Disease.—The test employed by Dew, Kellaway and Williams consists in the intradermal injection of 2 c.c. of hydatid fluid obtained by aseptic puncture of cysts from the lungs and liver of sheep. The wheal produced by the injection of hydatid fluid rapidly increases in size, tends to extend by pseudopodial outrunners and may reach 5 cm. in diameter. This wheal has generally reached its maximum in from fifteen to twenty minutes. The test is specific, although care has to be taken to provide controls and some experience in interpreting it is necessary to avoid pseudopositive readings. In preoperative or doubtful cases the test is of extreme value. In uncomplicated cases it is much more reliable than the complement fixation test, giving 92 per cent. of positive findings. Suppuration or rupture does not cause disappearance of the power to react, but the "delayed" phase is inhibited or suppressed. In postoperative cases the test remains positive in all patients and even in cured patients it may yield a reaction sixteen years after operation. There is great variation in the type of response immediately after operation, which is difficult to explain in the present state of knowledge.

Effect of Roentgen Ray on Blood Sugar.—Flecker and Cameron noted a temporary depression of the blood sugar in experimental animals within twenty-four hours after exposure with a return to normal in from four to eight days.

Medical Journal of South Africa, Johannesburg

20: 255-282 (April) 1925

*Prevalence of Cancer Among Native Races of Natal and Zululand. W. Watkins-Pitsford.—p. 257.
Symposium on Dental Sepsis; Oral Infection. E. A. Willey.—p. 260.
Systemic Disease Associated with Dental Infection. R. L. Girdwood.—p. 261.
Bacteriology of Pyorrhea. J. Pratt-Johnson.—p. 264.
Case of Chronic Ulcerative Colitis. I. J. Block.—p. 267.
Case of Gasserian Ganglion Successfully Removed. R. L. Daly.—p. 268.

Cancer Among Natives in Natal and Zululand.—During the four years, 1906-1909, eight deaths from cancer were reported among the whole native population (930,000) of Natal and Zululand, giving a crude death rate during the period of approximately 0.21 per hundred thousand per annum. For the same period the average yearly death rate from cancer among the Indian immigrants was approximately 11.9 and among the Europeans 57.5. The native death rate per hundred thousand from all causes during the year 1906 was 1,317. The cancers were of the breast, liver, stomach, glans penis and one was a sarcoma of the shoulder. In addition thirty-nine specimens of new growth from living natives were submitted for examination. Eighteen of these proved to be simple tumors, nine sarcoma, nine carcinoma, one rodent ulcer, one intracystic papilloma of the breast, and one compound parotid tumor.

Sei-I-Kwai Medical Journal, Tokyo

44: 1-18 (April) 1925

Bacteriophage. II. Physiochemical Properties of d'Herelles' Lytic Agens. Yoshio.—p. 1.
Pathologic Anatomy of Pleuropneumonia bovis contagiosa in Chosen. T. Kimura, T. Fukushima and T. Eujii.—p. 16.
Sarcoma of Lumbar Vertebra. N. Kono.—p. 18.

Bulletin de l'Académie de Médecine, Paris

93: 475-521 (May 5) 1925

Dosage of Insulin. A. Desgrez et al.—p. 478.
Public Health Service in African Colonies. Brumpt and Joyeux.—p. 490.
Classification of Bacillus of Avian Salmonellosis. Lignières.—p. 500.
*Pathogenesis and Treatment of Asthma. D. Daniélopolu.—p. 505.
*Double Heart Impulse. E. Donzelot.—p. 514.
Acoustic Requirements of Public Halls. Marage.—p. 517.

Pathogenesis of Asthma, Its Medical and Surgical Treatment.—Daniélopolu reiterates that local factors, such as a local anaphylactic condition, an intrapulmonary or extrapulmonary affection, play the main rôle in the occurrence of asthma. Calcium chlorid, given for weeks at a daily dose of from 5 to 10 gm., reduces the general amphotonia and the local hyperexcitability, and thus aids in prevention of the paroxysms. Quinin gave good results in one case; iodids showed a favorable adjuvant action. Autoserotherapy, autohemotherapy and tuberculin therapy have all proved useful in certain cases, as also measures to interrupt the reflex arc. The operation suggested consists of cervical sympathectomy, severing all the fibers from the vagus or superior laryngeal nerve entering the thorax; also cutting the rami communicantes connecting the inferior cervical ganglion and the first thoracic nerve with the sixth, seventh and eighth cervical and first dorsal nerves. The operation should be performed on both sides. If the heart is sound, removal of the right stellate ganglion may suffice.

Double Nature of Cardiac Automatism.—On the basis of numerous clinical findings, Donzelot affirms that the cardiac cycle involves both an auricular impulse and a ventricular impulse. The auricular impulse, originating in Keith's node, has a subordinate significance, since the periodic contraction of the auricle protects the ventricle, but is not a necessity for the work of the heart. The output of the heart may be still sufficient, without any auricular contraction. The ventricular impulse, developed in Tawara's node, is of primordial importance. This, he thinks, distributes the blood throughout the organism by the ventricle systole. Disturbances of the impulse production here are grave, and its loss entails complete arrest of the circulation. The theory of a double heart impulse, he says, throws a new light on arrhythmias.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 635-670 (May 1) 1925

Technic for Microscopic Study of Duodenal Juice. Chiray and Triboulet.—p. 635.
Anemia in Uremia. M. Renaud.—p. 636.
Blood Transfusion in Anemia from Uremia. P. E. Weil and Lamy.—p. 637.
Amebic Abscess Cured Without Operation. Chauffard and Clément.—p. 646.
*Hyperglycemia Test in the Obese. M. Labbé and R. Boulin.—p. 649.
*Jaundice from Ascarids. M. Labbé and L. Denoyelle.—p. 653.
Eight Hundred Epinephrin Injections in Case of Asthma. G. Etienne et al.—p. 657.
*Serotherapy in a Case of Acute Myelitis. G. Etienne.—p. 662.

Glucose Tolerance Tests in the Obese.—Labbé and Boulin state that the test alimentary hyperglycemia persists in the obese for more than three hours, and is never followed by a hypoglycemia, while in a normal person it disappears in less than seventy-seven minutes at most. This disturbance of glucose regulation remains stationary in most obese subjects; sometimes it develops into diabetes, or in a paradiabetic condition, easily cured

Jaundice from Obstruction by Ascarids — Labbé and Denoyelle's case, in a young woman, presented the character of a catarrhal jaundice, and was not accompanied by fever or pain. The diagnosis was made when expulsion of several ascarids resulted in a transient improvement. Vigorous treatment for the helminthiasis was followed by a definite recovery. The ascarids evidently had obstructed the common bile duct, causing retention of the bile. In cases of catarrhal jaundice of uncertain nature, examination of the stools for helminth ova may suggest an early diagnosis.

Myelitis with Aspect of Purpura Infection.—Etienne's patient, aged 36, had suddenly developed a syndrome of grave infection of septicemia type. An ataxic-adynamic condition, purpura, swelling of the joints and generalized rigidity were followed by a progressive ascending paralysis. Protein therapy induced a partial improvement, and an antipoliomyelitis serum completed the cure in a few days. The serotherapy was not begun till the thirty-seventh day.

Comptes Rendus de la Société de Biologie, Paris

92: 1089-1172 (May 1) 1925. Partial Index

*Nitrogen Metabolism in Hyperthyroidism. G. Etienne et al.—p. 1094.
*Nitrogen Metabolism in Thyroid Insufficiency. G. Etienne et al.—p. 1095.
*Combined Infection in Amebiasis. de Lavergne and Florentin.—p. 1097.
*Technic for Enrichment of Stools. A. Robin.—p. 1099.
*Tissue Glycolysis in Diabetes. Mauriac and Aubertin.—p. 1101.
*Action of Radium on Vaccines. R. Bruynoghe.—p. 1110.
*Polycythemia in Emphysema. van den Eeckhout and Lahaye.—p. 1112.
*Antidiphtheria Vaccination. P. Nélis.—p. 1114.
*Action of Quinin on Diphtheria Toxin. P. Nélis.—p. 1116.
Sedimentation and Surface Tension in Shock. E. Zunz.—p. 1119.
Sensitizing Action of Bacillus Mesentericus. Petrovanu.—p. 1124.
Bacteriolytic Action of Streptothrix. A. Gratia and S. Dath.—p. 1125.
Muscle Antagonism in Voluntary Movements. Noica.—p. 1128.
Hemolytic Properties of Blood Platelets. C. Popesco.—p. 1136.
*Vaccination Against Typhoid. Cantacuzène and Panaitescu.—p. 1138.
*Effect of Dysentery Toxin on Nervous System. A. Tupa.—p. 1141.
Oculointestinal Reflex. D. Daniélopolu et al.—p. 1143.
Action of Epinephrin on Intestine. Daniélopolu et al.—p. 1146.
Surgical Treatment of Angina Pectoris. Daniélopolu and Goliciu.—p. 1150.
Radiation of Pain in Angina Pectoris. D. Daniélopolu.—p. 1155.
Blood of Portal System. M. Popper and C. Popesco-Inotesti.—p. 1160.
Associated Infection in Tuberculosis. Olinesco and Popper.—p. 1162.
*Avitaminosis and Rickets. Banu et al.—p. 1166.
*Microbes in Human Milk. T. Mironesco and A. Jonesco.—p. 1168.
*Rôle of Vagus in Epileptic Seizure. A. Popea et al.—p. 1170.

Nitrogen Metabolism in Hyperthyroidism and in Thyroid Insufficiency.—Etienne, Richard and Roesch's observations include twenty-two patients with a syndrome of exophthalmic goiter, and ten with thyroid insufficiency. Nitrogen metabolism changes were noted in both affections, and patients in both groups with a high Ambard coefficient were successfully treated with thyroid extract. These facts, they say, suggest the pathogenic identity of different thyroid conditions.

Associated Fusiform and Spirochete Infection in Rectum.—Examination of the rectum of a patient with amebic dysentery revealed the presence of a diphtheroid false membrane, resembling that in Vincent's angina. This combined infection had developed in the intestinal tissue altered by the amebiasis. This explains the efficacy of neo-arsphenamin in the disease.

Method of Enrichment of Feces for Examination for Parasites.—Robin asserts that with his technic, in which Schweitzer's reagent is used, he obtains enrichments comparable to those by Téléman's method, but free from nondigested elements, often rendering the preparation indistinct. With helminth ova the enrichments appear to be superior to those by Téléman's method, while with encysted protozoa the results are identical or even better. The ova and cysts appear only slightly modified.

Tissue Glycolysis in Experimental Diabetes.—Mauriac and Aubertin's investigation in rabbits and dogs very often showed an equal glycemia in the femoral artery and in the vein. But in the kidney, the venous glycemia was almost always less pronounced than the arterial glycemia, with a difference of milligrams per hundred cubic centimeters. The muscle glycogen, interposed between the femoral and the visceral vascular system, compensates for the destruction of sugar in the tissues.

Action of Radium on Vaccine.—Bruynoghe applied to the cornea and to the shaved skin of rabbits vaccine exposed to radium, or not thus exposed. Comparison of the findings testified to the destruction of the vaccine virus by the radium emanations.

Compensatory Polycythemia with Pulmonary Emphysema.—After citing a case of polycythemia that developed in a man with pneumothorax and polycythemia in a dog that had had part of the lung blocked with paraffin, van den Eeckhout and Lahaye describe their research on ten old horses. While the blood of the normal animals showed 7,000,000 erythrocytes, there were from 8,000,000 to 14,500,000 in the blood of horses with emphysema. Evidently a compensatory polycythemia develops with an insufficient respiration surface.

Part of Anatoxin in Vaccination Against Diphtheria.—Nine months after vaccination Nélis noted in seven out of ten rabbits, twice inoculated (at twenty day intervals) with anatoxin (1 c.c.), a negative reaction with 1/50, 1/25, 1/10 and 1/5 of a lethal dose of toxin. With 0.5 c.c. of anatoxin the immunity did not persist over five months. He concludes that an anatoxin rich in toxoids possesses a high antigen value. Inactivated toxins, deprived of toxoids, may also have an antigen property, but the immunity appears slowly.

Effect of Quinin on Diphtheria Toxin.—Experiments on guinea-pigs, made by Nélis, showed an antitoxic action of soluble salts of quinin on diphtheria toxin. The action may be catalytic or due to changes induced in the colloids of the toxin.

Two Ways of Typhoid and Paratyphoid Vaccination.—Cantacuzène and Panaitescu's statistics cover 8,673 persons inoculated subcutaneously; 2,286 given Besredka's bile-vaccine by mouth, and 5,575 control subjects. A certain number were vaccinated once, others twice or three times. In six and a half months ninety-six cases of typhoid and three of paratyphoid were recorded, including only nine vaccinated patients (three inoculated subcutaneously). The disease appeared from three to five months after the vaccination. The morbidity was thus 0.035 per cent. after subcutaneous vaccination; 0.26 after the buccal administration, while it was 1.8 per cent. in the controls.

Lesions of Nervous System from Dysentery Toxin.—Tupa's research on 200 rabbits, inoculated with dysentery toxin, demonstrated that in dysentery the nervous system is affected more than the intestine. The lesions are localized in the cervical enlargement of the spinal cord and in the bulbar region. The gray matter of the cord suffered most.

No Rickets with Avitaminosis, but Retarded Growth.—Banu, Negresco and Heresco submitted young dogs to a vitamin deficiency diet. The development of the animals was retarded and the general nutrition disturbed. Heat and lack of light further enhanced the phenomena. But in no instance did lesions of rickets appear.

Elimination of Microbes by Human Milk.—None of eight infants, fed at the breast by women with scarlet fever, contracted the disease. Colon bacilli were found in the milk of a woman with sudden fever and digestive disturbances. The condition of the nursling was not affected. In a case of typhoid fever the specific bacillus was detected in the milk on the eleventh day of the disease. The nursling, aged 25 days, died two weeks afterward with signs of typhoid. Examination of the milk in a case of cerebrospinal meningitis revealed no microbes.

Rôle of Hypervagotonia in Epileptic Seizure.—In research on forty-five epileptics, Popea, Eustatziu and Holban paralyzed the vagus with atropin. The injection was followed in ten minutes by a seizure in six persons. In one case the seizure occurred thirty minutes after the test, in fifteen cases in the first twelve hours. Their conclusion is that the seizure may be accompanied or even preceded by hypervagotonia, but that the latter is not the causal factor of epileptic seizures.

Presse Médicale, Paris

33: 625-640 (May 13) 1925

Reflex Disturbances in Digestive Tract Originating in Gallbladder. Ramond and Parturier.—p. 625.
*Erythrocyte Sedimentation After Meals. S. Balachowsky.—p. 626.
*Intracardiac Injections of Epinephrin. T. Asteriades.—p. 629.

Changes in Sedimentation Speed Occurring After Meals.—Balachowsky describes a technic for the estimation of changes in the sedimentation speed of erythrocytes immediately after meals. A drop of blood suffices for the test. One hundred measurements made by this method showed that acceleration or retardation of sedimentation speed may occur suddenly after meals. The changes appear to be connected with the concentration of the erythrocytes, depending on vasomotor reflexes. These postprandial variations may be valuable in diagnosis of gastric affections, especially cancer.

Intracardiac Injection of Epinephrin.—Asteriades reports that a single injection of 0.25 mg. of epinephrin, immediately following syncope from chloroform, definitely resuscitated a young man. Two injections of 0.25 mg. in a boy, aged 5, and three injections in a woman, aged 28, made eight and ten minutes after the syncope, failed to reanimate the patients.

33: 641-656 (May 16) 1925

*Sedimentation Test in Tuberculosis. Salomon and Valtis.—p. 644.
Magnesium Sulphate in Treatment of Eclampsia. R. Clément.—p. 646.

Integral Sedimentation Test in Pulmonary Tuberculosis.—Tests of the sedimentation in citrated blood in three layers, first the red corpuscles, then the white corpuscles, and then the citrated plasma, showed Salomon and Valtis that while the time required for this sedimentation is from four to over eleven or even seventeen hours in normal persons, the sedimentation takes only from twenty to fifty-five minutes in tuberculosis, with a developing process, and not more than twenty or thirty minutes in grave cases. In a benign form of tuberculosis, with fibroid changes, the time of sedimentation varies between seventy minutes and two hours. General improvement following artificial pneumothorax is accompanied by retarding of the sedimentation, while a pleural complication or the formation of a new focus in the lungs reduces the sedimentation time. The sedimentation test may be helpful in prognosis of tuberculosis as well as of induced pneumothorax.

Revue de Médecine, Paris

42: 1-80, 1925

*Physiology of the Lung. G. H. Roger and L. Binet.—p. 1.

Physiologic Rôle of the Lung.—Roger and Binet's research has confirmed that the lung tissue destroys fats, transforming them into products which do not pass into ether extracts. This lipopexy and lipodieresis (destruction of fats) appeared constantly in the arterial blood in vitro while in the venous blood the fats were almost unchanged. Lipodieresis is a phenomenon of oxidation, since passage of air stimulated the destruction of fats in the arterial blood, and even induced a slight lipodieresis in the venous blood. The blood of the left heart contains less protein sugar than the right heart, proving that the lung splits the sugar and releases glucose. Intravenous injections of lung extract slightly reduced the glycemia and notably decreased the lipemia in animals. Subcutaneous injections of lung extract from a dog in inanition reduced the weight of the animal, while a contrary effect was obtained with the extract from dogs on a fattening diet. They reiterate that the lung appears to be a gland important in metabolism, and that the fats of the lung are rich in vitamins.

Schweizerische medizinische Wochenschrift, Basel

55: 381-404 (April 30) 1925

*Flatfoot and Its Treatment. M. Pierroz.—p. 381.
Gennerich's Intraspinal Treatment of General Paralysis. T. Brunner.—p. 390.
Perforation of Intestine in a Hernia. E. Juillard.—p. 392.
*Relation to Reality in Psychanalytic Treatment. H. Knoll.—p. 394.

Flatfoot and Its Treatment.—Pierroz describes the pathology and gymnastic treatment of flatfoot.

Relation to Reality in Psychanalysis.—Knoll warns against premature disclosing of the evident complexes in the psychanalytic treatment. The physician must take care to keep the patient in touch with reality, and has to ascertain how he utilizes the acquired insight. If the patient refuses to face realities, the treatment should be discontinued before he sinks completely into his unconscious phantasies.

Archivio Italiano di Chirurgia, Bologna

10: 821-940 (Dec.) 1924

*Jejunal Ulcer After Gastro-Enterostomy. Dogliotti and Riccio.—p. 821.
The van Slyke Index of Urea Excretion. F. Vicentini.—p. 858.
*Epidemic Micrococcus Inguinal Adenitis. R. A. Sala.—p. 867.
Surgical Kidney and Its Treatment. R. Broglio.—p. 901.

Peptic Ulcers.—Dogliotti and Riccio relate that they found it constantly possible to perform all kinds of operations on the stomachs of dogs without development of peptic ulcer, confirming their clinical experience that this is the rule when the operations are done without unnecessary traction or injury of tissues or abuse of nonabsorbable material, and a milk diet is enforced for twenty-five days and a semisolid for an additional month. They also refrained from repeated roentgen examinations with contrast suspensions or use of the stomach tube. They confirm in the most categoric manner that the mucosa of the jejunum is absolutely indifferent to the gastric secretions so long as it is healthy.

Epidemic Inguinal Adenitis.—Sala cultivated *Micrococcus paramelitensis* in twenty-six cases of enlargement and suppuration of the inguinal and crural glands in 1921. Bubonic plague had been suspected at first. The intensity of the inflammatory process developing in these glands was in marked contrast to the integrity of the skin. The epidemic followed a local epidemic of 900 cases of jaundice. Bed rest, neo-arsphenamin and excision of the suppurating mass of glands gave the best results.

Pediatria, Naples

33: *449-504* (May 1) 1925

*Treatment of Infantile Leishmaniasis. S. Cannata.—p. 449.
*Hemopoietic Organs in Secondary Anemia. R. Pollitzer.—p. 453.
Vaccine Prevention of Scarlet Fever. F. Amenta.—p. 474.
Frequency of Child Applicants in Dermatologic Dispensary. A. F. Canelli.—p. 478.
Congenital Spasm of Cardia in Child, Aged 6. E. Castronovo.—p. 483.

Treatment of Infantile Leishmaniasis.—Cannata shows that some infections which are resistant to potassium and antimony tartrate yield to the homologous sodium compound.

Hematopoietic Organs in Secondary Anemia.—Pollitzer finds that the histologic changes of the bone marrow in anemic children depend on the etiology rather than on the intensity of the disease. When suppuration, or malnutrition, is the cause, the immature white cells of the bone marrow are present in about three times larger amounts than the nucleated red cells (postnatal type of erythropoiesis). The number of erythroblasts is equal or a little higher than the number of immature whites in anemia due to hereditary syphilis, malaria or leishmaniasis (prenatal type). In pernicious anemia, the embryonal megaloblastic type is pronounced.

Policlinico, Rome

32: 623-657 (May 4) 1925

*Visualization of Gallbladder. Sabatini and Milani.—p. 623.
*Postoperative Tetanus. R. Mosti.—p. 629.
Baccelli's Treatment of Postoperative Tetanus. S. Bivona.—p. 631.
*Tansini's Sign. R. Grignani.—p. 634.

Visualization of Gallbladder by Bromids.—Sabatini and Milani administer 10-20 gm. of sodium or strontium bromid in 100 gm. of water by mouth and make roentgenograms of the gallbladder five, eight and twelve hours later. The patient has to be on very light diet the preceding day. The method is simple, safe and without trouble for the patient.

Postoperative Tetanus.—In Mosti's two patients the postoperative tetanus was probably due to an infection by the feces (gangrenous hernia in one, colpoperineorrhaphy in the other). The second patient recovered after large intraspinal and intravenous doses of antitetanus serum and injections of phenol.

Tansini's Sign.—Grignani asserts that an enlargement of the abdomen with stenosis of the pylorus indicates, in the majority of the patients, metastasis of cancer in the abdominal organs.

Riforma Medica, Naples

41: *265-288* (March *23*) *1925*

Biologic and Physical Bases for Radiotherapy. Perussia.—p. 265.
Possible New Infection in Sixth Year of Syphilis. Oro.—p. 268.
Five Cases of Giant Appendix. G. Carisi.—p. 273.
Form of Sporulation of Ameba in Blood Stream. M. Gioseffi.—p. 276.
*Case of Beggiatoa Thrush. O. Casagrandi.—p. 277.

Beggiatoa Thrush.—Casagrandi calls the beggiatoa cultivated from a case of thrush in the vagina, *B. albicans,* and presents it as a new morbid entity. The patient applied for treatment mainly on account of the strong odor of sulphuretted hydrogen. Iodin and potassium permanganate treatment was futile, but calcium chlorid proved effectual both in treatment and in prophylaxis.

41: 289-312 (March 30) 1925

*Tender Point in Spleen Region in Malaria. E. Zito.—p. 289.
Slow Chronic Apyretic Pulmonary Tuberculosis. La Torre.—p. 291.
*The Costa Reaction. M. Bagliani.—p. 293.
Splenectomy After Years of Fever in Malaria. D. Giordano.—p. 296.
Herpes Infection. I. Iacono.—p. 298.

The Pagniello Point of Special Tenderness in Malaria.—Zito confirmed on 150 malarial subjects the presence in 90 per cent. of a point painful on light pressure, when the finger or the head of a pin was drawn along the ninth left interspace or several interspaces. The point is in the Head zone corresponding to the spleen, and is probably a reflex phenomenon. He never found it in nonmalarial subjects.

The Costa Reaction.—Bagliani states that Costa's procain-formaldehyd test induces the characteristic precipitation very rapidly in tuberculosis, influenza, syphilis and malaria, while in the healthy it takes an hour for even a slight response to be manifest. The reaction seems to be an index of the activity of the process going on, but the clinical import depends on the relative amounts of the elements used in the test, and the length of the interval. The plasma alone seems to be involved, not the fibrin.

Clinica, Montevideo

2: 1-17 (Jan.) 1925

*Prophylaxis of Tuberculosis in Children. V. Zerbino.—p. 1.

Prophylaxis of Tuberculosis in Children.—Zerbino emphasizes the necessity for seeking out the infants and children exposed to contagion, and that the welfare work should include the whole family of the tuberculous.

Prensa Médica Argentina, Buenos Aires

11: 1013-1040 (April 10) 1925

*Blood Cholesterol and Arterial Pressure. J. Heitz.—p. 1013.
Vitiligo with Trophic Joint Lesions. Castex and Camauer.—p. 1017.
Pregnancy Insufficiency of the Liver. R. Mestre.—p. 1026.
*Cholesterol in Relation to Hemolysis. A. H. Roffo.—p. 1035.

Relations Between Cholesterol Content of the Blood and the Blood Pressure.—Heitz states that the highest cholesterol content was encountered in his research in cases of very high blood pressure with high diastolic pressure, and in kidney disease, even with low blood pressure. He queries whether hyperplasia of the suprarenals may not be a reaction common to both these conditions.

Cholesterol and Hemolysis.—Roffo's charts show a regular and parallel increase in the hemolysin and cholesterol content of the blood with advancing age in the animals examined. The cholesterol content increases parallel to the hemolytic power in different species of animals, from the guinea-pig, with only 0.383 per thousand cholesterol, to the dog with 1.292, the fowl with 1.700, and the eel with 6.836.

Repertorio de Medicina y Cirugía, Bogota

16: 149-190 (Jan.) 1925

*Classification of Dystrophias in Nurslings. C. Torres Umaña.—p. 152.
*Neurosyphilis. G. Toro Villa.—p. 161.
Official Report on Part of Hookworm Campaign. C. Franco F.—p. 171.
Idem. S. Tellez.—p. 182.

Classification of Dystrophias in Infants.—Torres Umaña segregates the digestive and extradigestive dystrophias, including in the digestive the chemical, mechanical and nervous dyspepsias and exogenous intestinal infection. The extradigestive are the result of endocrine disturbances, congenital or acquired, of inadequate or improper feeding, or of parenteral infection. The feeding history, the condition of the viscera, microchemical study of the feces and comparison of the intake with the excretion of certain substances will reveal which are primary and which secondary disturbances, and the proper treatment.

Neurosyphilis.—Toro Villa argues that there are no tardy localizations of neurosyphilis but only tardy manifestations of early localizations. In fully 25 per cent. of the cases of neurosyphilis the nervous system is attacked early, sometimes only transiently, but in other cases durably injured. He advises intraspinal treatment when the changes in the cerebrospinal fluid persist in spite of good general treatment.

Revista de la Asoc. Médica Argentina, Buenos Aires

38: 1-279 (April) 1925

Trachoma in Argentina. Prevalence and Prophylaxis. Demaria.—p. 5.
*Test Meals in Kidney Function Tests. C. P. Waldorp.—p. 39.
Clinical Experiences in Idem. Waldorp and Bordo.—p. 60.
A Tuberculous Duodenal Ulcer. J. Orgaz.—p. 123.
Insulin Treatment. Theory and Practice. P. Escudero.—p. 135.
*Treatment of Gastric and Duodenal Ulcers. Novaro et al.—p. 167.
*Operative Treatment of Kidney Calculi. Castaño ard Matta.—p. 203.
*Pressure on the Brain. E. Adrogué and M. Balado.—p. 252.

Test Meals in Exploration of the Kidneys.—Waldorp has long insisted on the advantages of testing the functional capacity of the kidneys on a test meal. He prefers the Schlayer technic for the purpose, and gives extensive tables of the findings in nineteen cases in which various functional tests were repeatedly applied. With the Schlayer technic, the first day the patient eats five light test meals; all but two are different, forming a combination of various diuretic substances; the second day the five meals are of substances free from any irritating action. He emphasizes the importance of recording the maximal output of urine four hours after the meal, and the minimal at the farthest moment, namely, the morning after. Also the importance of the position, reclining promoting and the erect position checking elimination of the fluids ingested. He reiterates also that the fundamental sign of renal insufficiency is the change in the power of concentration, and that the dilution test is the capital sign for the prognosis, as it reveals the ability of the kidney to compensate its own insufficiency.

Present Status of Treatment of Gastric and Duodenal Ulcers.—Novaro and his co-workers admit that ulcers in the pyloric region are generally surgical, but say that otherwise all call for systematic medical treatment, and this includes vaccine therapy as there is generally mixed infection. Chronic ulcers belong to the surgeon, and they regard gastro-enterostomy as only exceptionally called for. In one case Sippy treatment for six months induced great improvement, but then severe hemorrhage compelled an operation for the duodenal ulcer. It was found latent, but not a trace of retrogression could be discovered.

Kidney Calculi.—Castaño and Matta state that there was no fatality in the 45 Argentine cases of pyelotomy for calculi which they have collected, but the mortality was 2.1 per cent. in 1,441 compiled from international literature. When hemorrhage after nephrotomy was mentioned, fully 25 per cent. proved fatal, and the total mortality in 2,022 nephrotomy cases was 10.1 per cent. In the total of 1,807 nephrectomy cases, the mortality was 8.8 per cent., including 6 deaths in the 29 Argentina cases. They conclude from this analysis that in case of hesitation between nephrotomy and nephrectomy, the preference should be given to the latter, as it is less grave and less fatal than nephrotomy. But in bilateral cases the intervention should be conservative in the extreme, as recurrence is so common. The importance of systematic treatment both before and after the intervention is obvious.

Behavior of Pupil with Exaggerated Intracranial Pressure.—Adrogué and Balado state that in experiments on dogs and in clinical cases the morbid dilatation of the pupil from hypertension in the ventricle is characterized by the maximal dilatation and by the fact that the pupil does not contract during sleep (as occurs with mydriasis from amaurosis). When the dilatation of the pupil is unilateral, it corresponds to the ventricle or side of the head involved. Bilateral, it is a sign of ventricular hypertension if there are no respiratory and heart disturbances. Such disturbances are inevitable with subarachnoid hypertension sufficient to induce bilateral morbid dilatation of the pupil. The bilateral hypertension mydriasis used to be ascribed to some direct lesion of the motor oculi, but their research demonstrated that this nerve was often intact.

Revista de Medicina y Cirugía, Caracas

7: 239-260, 1924

Electricity in Treatment of Diarrhea in Children. V. Peña.—p. 239.
*Intermittent Albuminuria. C. André.—p. 241.
Serum Sickness Should Not Deter from Serotherapy. Peña.—p. 253.

Intermittent Albuminuria.—André is convinced that intermittent albuminuria is a manifestation of an insidious nephritis; this heals in time and the albuminuria gradually disappears, or it may persist as orthostatic or fatigue albuminuria. The prompt influence of absolute rest demonstrates the tendency to spontaneous cure. Reclining after each meal aids digestion and combats debility. The tendency to albuminuria may subside if the urine is kept slightly alkaline, but the most important measure of all is a change to out-of-door country life. A few months in the country may be equivalent to a resurrection.

Semana Médica, Buenos Aires

1: 785-840 (April 9) 1925

Hookworm in Corrientes Province. Goitia and Castillo Odena.—p. 785.
*Active Rheumatism of the Heart. J. Raúl Goyena.—p. 789.
*Identification of Roentgenograms. J. Mendioroz.—p. 793.
Colorimetric Estimation of Urea. J. A. Sánchez.—p. 795.
Intestinal Disinfectants in Pediatrics. J. J. Darnet.—p. 798.
*Sphincter Function of Ileocecal Valve. R. Brouca.—p. 800.
Neutral Oil for Vehicle. R. Giordano.—p. 822.

Acute Febrile Rheumatism of the Heart.—The clinical picture of acute myocarditis and a pleuropulmonary process developed suddenly in a healthy young man; only repeated questioning recalled vague and transient pains in one shoulder a year before. The assumption of rheumatism was confirmed by the benefit from salicylates, supplemented with digitalis. This arrested the recurring attacks of inflammatory weakening of the heart action.

Finger Print Signature on Roentgenograms.—Mendioroz applies the finger print on a white porous card, using an opaque ointment made of a saturated mixture of red oxid of mercury, or the protochlorid in a wax preparation. Addition of finger-print ink renders the print visible at all times.

The Sphincter Function of the Ileocecal Valve.—This profusely illustrated study confirms the assumption of the action of a ringlike muscle which, in the cat at least, is controlled by a center in the spinal cord. This center can be stimulated by reflex action.

Archiv für klinische Chirurgie, Berlin

135: 1-492 (April 2) 1925

*Habitual Dislocation of Shoulder. W. Pilz.—p. 1.
Hypnosis in Surgery and Its Borderland. A. Haas.—p. 23.
*Innervation of Intraperitoneal Adhesions. A. Wereschinski.—p. 39.
Bone Regeneration. H. Koch.—p. 48.
*Treatment of Trigeminal Neuralgia. B. Gutnikoff.—p. 79.
Intralaryngotracheal Goiter. Bundschuh.—p. 106.
Gallbladder Stasis from Mechanical Causes. Büdinger.—p. 117.
Anatomy of So-Called Accessory Liver. Walzel and Gold.—p. 138.
Iodin Treatment of Goiter. Breitner and Orator.—p. 143.
Unusual Complications After Thyroidectomy. Just.—p. 152.
Recurring Goiter. E. Just.—p. 160.
*Lymphocytosis in Exophthalmic Goiter. Beresow.—p. 166.
Primary Sarcoma of Spleen. H. Köhler.—p. 194.
Artificial Ureter. R. Demel.—p. 203.
Adamantinoma and Odontogenous Tumors of the Jaw. Lukomsky.—p. 233.
*Obstruction of Common Bile Duct and Jaundice. Haberland.—p. 248.
*Vicious Circle in Postoperative Jejunal Ulcer. K. Blond.—p. 281.
Reconstruction of Thumb with Big Toe. W. Porzelt.—p. 340.
Experiments in Chromocholoscopy. W. Suchow.—p. 356.
Fistulas of Pancreas and Pancreatic Duct. Kleinschmidt.—p. 363.
*Appendicitis and Oxyuris. H. Steichele.—p. 373.
Toxic Process in Surgical Tuberculosis. G. Kelemen.—p. 382.
*Effect of Section of Sympathetic on Local Infections. E. Liek.—p. 393.
*Obstruction of Bile Ducts by Cholesterol Sand. K. Büdinger.—p. 406.
Autoplastic Bone Transplantation. V. Hoffmann.—p. 413.
"Biologic Origin of Gastric Cancer." G. E. Konjetzny.—p. 486.
Hallux Valgus. O. Hagen-Torn.—p. 490.

Roentgen Examination of Habitual Dislocation of Shoulder.—Pilz asserts that in recurrent dislocation changes usually occur in the bone. Roentgen findings afford a reliable and adequate picture of the conditions in the bony parts of the joint.

Nerve Fibers in Intraperitoneal Adhesions.—Wereschinski states that his pathologic-anatomic material, experimental and clinical, confirms the presence of nerve tissue in adhesions. The nerve fibers develop from the preexisting nerves *in the adjacent tissues*. These nerve filaments in the intraperitoneal adhesions, described by Girgolaff and himself, apparently play a part in the formation of the sensory reflex arc.

Alcohol Injection in Gasserian Ganglion for Trigeminal Neuralgia.—Complete recovery followed in twenty-seven of

Gutnikoff's thirty-five cases, in eighteen cases after one injection, in nine after two. Operative intervention for the removal of the gasserian ganglion—even by experienced surgeons like Krause—results in a mortality of 12 per cent. Seventeen illustrations are included, depicting the anatomy of the region, the manner of procedure, and possible injuries by the needle to the eustachian tube and to the outer wall and the intracranial portion of the internal carotid.

Instability of Lymphocytosis as Element in Diagnosis and Prognosis.—Beresow's purpose is to show the increased stability of the lymphocytosis toward atropin, parallel to the changes in the vegetative nervous system, through the action of the hormones of the thyroid and other endocrine glands.

Relation of Obstruction of Common Bile Duct to Jaundice.—Haberland reports on twenty-six further experiments, tying or resecting the common bile duct in dogs. With no infection in the bile ducts, healthy grown dogs gave no evidence of illness during the first four weeks. Biliary pigment appeared in the blood and urine six to twelve hours after the operation. The skin did not become yellow, the highest bilirubin value in the serum being only 1.43 mg. per hundred cubic centimeters. The kidneys eliminated the bilirubin immediately, as the threshold value in dogs is low. After four weeks, grave symptoms appeared, with cirrhosis of the liver, ascites from obstruction, and death due to intoxication, cachexia, and heart weakness. Yellowness of the skin was noted in the sick dogs. Experiments on other healthy grown animals resulted in a slight yellowing of the skin after a few days in all except in rabbits. As the threshold for bilirubin in the kidneys and skin differs greatly in the various animal species, the results after resection of the common bile duct present marked differences, and only the sum total of the observations justifies conclusions.

Vicious Circle After Gastro-Enterostomy and Postoperative Jejunal Ulcer.—Blond says that postoperative jejunal ulcers and probably all other ulcers are caused by circular spasms of the gastric and duodenal musculature. How and where these spasms originate is not always evident. The intermittent spastic incarceration which he considers probable does not exclude mechanical, chemical, and circulatory disturbances, present in the symptom-complex, but of secondary importance in the origin of the spasms. The clinical picture of so-called arteriomesenteric occlusion may be caused by circular spasms, especially after an operation leading to lesions of the autonomous centers in the walls. Neither surgical measures nor internal therapy is the cause.

Appendicitis and Oxyuris.—Steichele describes a set of symptoms, produced by oxyuris, which suggests appendicitis. The symptoms allow no certain differentiation between an oxyuris appendicitis and true inflammation of the appendix. The cases with oxyuris in the appendix are generally chronic. The condition is more prevalent in women than in men.

Effect of Section of the Sympathetic on Local Infections.—Lick's experiments on animals with injection of anthrax cultures after the section were not extensive, but they seem to him to prove that in severe infections arterial hyperemia is capable of preventing general infection by reenforcing the local resistance.

Obstruction of Bile Ducts by Cholesterol Clumps.—In two of Büdinger's three cases with a clear cut-picture of obstruction, clumps like those in thick pea soup appeared in the cholesterol mass.

Deutsches Archiv für klinische Medizin, Leipzig

147: 1-128 (April) 1925

Electrometric Titration of Stomach Contents. K. Leddig.—p. 1.
*Extracardiac Action of Digitalis. Veil and Heilmeyer.—p. 22.
Comparison of Temperature in Mouth and Rectum. H. Zimmermann.—p. 82.
*Diapedesis Hemorrhage into the Pericardium. Nordmann.—p. 100.
Influence of Foods on Cholesterol-Lecithin Ratio. Marie v. Babarczy.—p. 108.

Extracardiac Action of Digitalis.—Veil and Heilmeyer's physiologic research clearly revealed the action of digitalis on the secretory functions of the kidneys, stomach, pancreas, and thyroid, its end-effect on the acid-base balance of the blood, and its property of inducing vagotonia.

Grave Diapedesis Hemorrhage into the Pericardium.—Nordmann describes two cases of hemorrhage through unruptured capillaries in the wall of the aorta and the heart, breaking through into the pericardium, with fatal outcome. The phenomenon is explained by comparison with experimental disturbances of the circulation leading to diapedesis.

Deutsche medizinische Wochenschrift, Berlin

1: 765-806 (May 8) 1925

Eye as Object of Experimental Medicine. W. Löhlein.—p. 765.
Ebstein's Theory of Calculi. H. Nakano.—p. 769. Cont'd.
Psychic Changes in Paralysis Agitans. Ostmann.—p. 770.
*Epidemic of Weil's Disease. Körner.—p. 772.
Ascites in Thrombosis of Portal Vein. E. Melchior.—p. 774.
*Amplifying Heart Sounds with Loud Speakers. G. Schwarz.—p. 777.
*Diagnosis of Syphilis. P. Tachau.—p. 780.
Technic for Insufflation of Tubes. B. Ottow.—p. 783.
*Leishmania Vaccine Reaction. S. M. Jessner and S. Amster.—p. 784.
Cuprum and Potassium Cyanatus in Malaria. Jachontow.—p. 785.
Infectious Diseases. O. Moog.—p. 787.
Sexual Aberations and Diseases of Children. Rohleder.—p. 790.
History of Therapeutics and Pathology. Diepgen.—p. 792. Conc'n.

Epidemic of Weil's Disease.—Körner observed an epidemic of Weil's disease verified by the protective power of convalescents' serum against experimental infection of guineapigs. All the patients were young people who had been bathing in a pool around the noon hour. The incubation was eight days. Jaundice appeared in twenty-six out of seventy-six patients. Catarrh of the conjunctiva and nasal mucosa was present in practically all of them. Pains in the neck and legs were distressing.

Amplifying Heart Sounds with Loud Speakers.—Only encouraging results have been obtained so far.

Diagnosis of Syphilis.—Tachau emphasizes the importance of an early diagnosis. One of his patients was a physician with a primary sclerosis of the conjunctiva, diagnosed bacteriologically as diphtheria, until the syphilitic exanthem appeared. Gummas are also often mistreated as tuberculosis.

Leishmania Vaccine Reaction.—Jessner and Amster prepared a vaccine from Leishmania cultures. If the medium is free from blood, the vaccine may be used for cutaneous tests ("leishmaniin reaction").

Klinische Wochenschrift, Berlin

4: 905-952 (May 7) 1925

*Significance of Electrolytes in the Organism. S. G. Zondek.—p. 905.
*Curative Action of High Altitudes. O. Kestner et al.—p. 910.
*Increase in Pulmonary Cancer. W. Berblinger.—p. 913.
*Herpes in Meningococcus Meningitis. P. György.—p. 916.
*Herpes Encephalitis. G. Steiner.—p. 917.
*Cataract from Avitaminosis. A. v. Szily and A. Eckstein.—p. 919.
*Protection Against Light. P. S. Meyer and S. Amster.—p. 921.
Wassermann Reaction with Dry Complement. E. Kuznitzky.—p. 923.
*Blood in Uremia. E. Becher.—p. 924.
*Shaking Cerebrospinal Fluid with Ether. V. Kafka.—p. 924.
Postencephalitic Spasms of Neck Muscles. K. Kolle.—p. 925.
Cholagogues. E. Neubauer.—p. 926.
*Interruption of Pregnancy. C. Bender.—p. 930.
Møllgaard's Chemotherapy of Tuberculosis. H. Ulrici.—p. 934.
A Thermoburette with Pump. E. Kaufmann.—p. 950.

Significance of Electrolytes in the Organism.—Zondek reviews the significance of electrolytes for clinical syndromes, especially tetany. Their changes in the blood are not decisive; it is the change at the cells which causes the different reaction to stimuli. An increase of an ion in the blood increases its concentration on the contact surfaces in the cells. Yet a similar effect is produced if the cells attract the ion from the blood stream, thus diminishing its concentration in the serum (for instance, lowering of the blood calcium after injections of epinephrin).

Curative Action of High Altitude.—Kestner, Dannmeyer, Peemöller and Liebeschütz-Plaut made gas metabolism studies on themselves at a high altitude (2,400 m.). This altitude did not change the oxygen consumption, but the climate, irradiation and cold increased the metabolism.

Increase in Pulmonary Cancer.—Berblinger finds a distinct increase in the frequency of primary cancer of the lung in 1920-1924. Influenza and smoking may be contributing causes.

Herpes in Meningococcus Meningitis.—György observed an instance of a beneficial influence from a strong herpes eruption on cerebrospinal meningitis The grave symptoms reappeared after the herpes vesicles had dried No meningococci were found in the vesicles, but a herpes encephalitis could be produced in a rabbit by their contents

Herpes Encephalitis.—Steiner reviews the encephalitis of rabbits He concludes that the type due to inoculation of herpes virus is a clinical and histologic entity

Cataract from Avitaminosis.—Szily and Eckstein publish their modification of McCollum's fodder 3143. They produced with it cataracts in young rats. The probable vitamin that prevents cataract—which they call vitamin Z—is perhaps contained in the wheat gluten

Protection Against Light, Especially by Tannin.—Meyer and Amster's experiments demonstrated that the skin may be protected with tannin for several hours against strong irradiation by the sun They recommend it either as a petrolatum containing 10 per cent tannin, or as a 10 per cent alcoholic solution

Blood in Uremia.—Becher found in the protein-free blood filtrate in uremia, a diazo and a urochromogen reaction. The former is chiefly due to the presence of aromatic oxy-acids In addition, he reiterates his other findings, which have been repeatedly summarized in The Journal

Shaking Cerebrospinal Fluid with Ether.—Kafka shook up cerebrospinal fluid with half of its volume of ether. The first fraction of ether shaken with Wassermann-negative fluids became more gelatinous than the ether from Wassermann positive fluids Subsequent extracts showed the opposite behavior The ether gave always a negative biuret test, but extracted the Wassermann reagin from the fluid

Interruption of Pregnancy—Bender discusses the social and hygienic indications for abortion She pleads for legal permission.

Medizinische Klinik, Berlin

21: 685 722 (May 8) 1925

Perthes Disease G Buttner—p 685
*The Agranulocytosis Question I Zadek—p 688
Tuberculosis of the Ear G Charousek—p 690 Conc'n
*Cerebrospinal Fluid in Compression of Cord K Peter—p 693
*Diagnosis of Separation of the Placenta P Klein—p 698
*Familial Tuberculosis Hamburger—p 699
Standardization of Syringes Straub—p 700
*Perirenal Hematoma. P Herszky—p 700
*Perforation of Uterus in Artificial Abortion S Lessnoi—p 702
"Technic for Intravenous Injection" J R Thim—p 705
Relation Between Bacillary Hog Cholera and Paratyphoid B A Materna and E Januschke—p 705
Connection Between War Influenza and Death from Nephritis Seven Years Later V Schnizer—p 706
Survey on Pulmonary Tuberculosis H Gerhartz—p 709
Legal Adjustment of Relations Between Physicians and Social Insurance. Wreschner—p 721

The Agranulocytosis Question.—Zadek concludes from atypical cases of agranulocytosis that it is not an independent disease, but only an abnormal type of reaction

Cerebrospinal Fluid in Compression of Cord.—Peter discusses details of the diagnosis especially by means of the Queckenstedt experiment (increase in pressure of the fluid after compression of the jugular veins, if the passage is free), with simultaneous lumbar and cisterna puncture

Diagnosis of Separation of the Placenta.—Klein asks the woman to strain as for defecation This causes both the uterus and the cord to descend. When the woman stops straining the uterus rises The cord rises with it so long as the placenta is not detached

Predisposition Versus Exposure in Familial Tuberculosis—Hamburger believes that a predisposition is a more important factor than the frequency of exposure Children associating with a severely infectious relative do not get infected more frequently than those who associate with a moderately infectious patient He saw a one year old healthy child playing only once for a few minutes with a *tuberculous* person The child died three months later from tuberculous meningitis

Perirenal Hematoma—Herszky's patient was a young girl who fell on the buttocks while jumping from a street car. Three weeks later a typhoid state set in, which ended with symptoms of ileus A large perirenal hematoma was discovered after laparotomy. As the clots were removed, the patient bled to death from a tear in the left suprarenal artery which had caused the apoplexy of the kidney.

Perforation of Uterus in Artificial Abortion.—Lessnoi finds that the percentage of perforations of the uterus with artificial abortion is much larger than generally supposed. The simultaneous injury of the bowel is usually made by a physician. In such complications, a laparotomy is indicated. In simple, sterile perforation, without bleeding, an ice bag and opium may be tried

Münchener medizinische Wochenschrift, Munich

72: 713 752 (May 1) 1925

Homeopathy A Bier—p 713 Conc'n, p 773
*Diagnosis of Gonorrhea in Women Danin—p 717
*Malaria Treatment in Neurosyphilis F. Bering—p 719.
Morphinism O Wuth—p 722
*Micrococcus Catarrhalis Causing Sepsis G Endres—p 723
Idem I Schilf—p 724
T B Immunization C Schone—p 724
*Ambulant Treatment of Contracted Flatfoot H Jordan—p 725.
*Epinephrin in Circulatory Failure C Haeberlin—p 727.
Appliance for Inguinal Hernia E Schilcher—p 729.
Welfare Work for Cripples F. Lange—p 731 Conc'n
*Acetylene Anesthesia in Obstetrics Behrendt and Maier.—p 734 *Conc'n.*
Medicolegal Obstetrics M Hofmeier—p 737.
Resorption from Urethra and Bladder O A Schwarz—p 737.
"Technic for Intravenous Injection" F Ortmann—p. 738
*Diagnosis of Cholesteatomatous Suppurations A. Scheibe—p. 738

Diagnosis of Gonorrhea in Women.—Danin found in gonorrhea in women a neutral or alkaline reaction of the vagina. The test paper should be pasted on a finger cot to introduce it into the vagina, avoiding the acid urine and the alkaline secretion from the cervix All the controls gave an acid reaction An acid reaction excludes gonorrhea if it is made at least five days after a menstruation or two days before its expected time. Opitz vouches, in a foreword, for the results reported

Malaria Treatment in Early Stage of Neurosyphilis.—Bering concludes that the malaria treatment influences the beginning changes in the cerebrospinal fluid especially well. A spinal puncture should be made in every syphilitic patient with headaches, or after paralytic symptoms, or with a persistent positive Wassermann reaction in the blood.

Micrococcus Catarrhalis Causing Sepsis.—Endres and Schilf describe the findings in a case of lethal sepsis with endocarditis and nephritis due to *Micrococcus catarrhalis.*

Ambulant Treatment of Contracted Flatfoot.—Jordan confirms the good results of injection of 20-30 c.c. of a 0.5 per cent solution of procain into the peroneus and extensor muscles, and sometimes also in the tibialis anticus, in spastic flatfoot One injection—rarely two—was sufficient to relax the spasm enough to make casts

Continued Subcutaneous Injections of Epinephrin in Circulatory Failure.—Haeberlin recommends subcutaneous injections of epinephrin in grave toxic weakness of the circulation The injections should be repeated every hour or two. He used 0.1-0.2 c.c of a 0.1 per cent solution The fluid should be massaged into the tissue

Acetylene Anesthesia in Obstetrics.—Behrendt and Maier extol the advantages of acetylene anesthesia in obstetrics. The blood from the umbilical vein contained always much less (one third to one quarter less) gas than the blood of the mother.

Diagnosis of Cholesteatomatous Suppurations.—In Scheibe's statistics of 169 deaths from otitis media there is not one case of simple chronic suppuration On the other hand, more than one half of the deaths were due to a so-called cholesteatoma The simple chronic suppuration is not dangerous even if untreated. Cholesteatoma does not endanger life if properly treated This may be done conservatively by lavages with the antrum tube If the practitioner does not know how to use it, the radical operation must be made. In both cases, however, the patient has to be examined every two or three months, because the epidermis, which causes the syndrome, remains. He has to submit to the control for his whole life. The cholesteatoma develops only with epitympanic perforations of the ear drum. They are situated in the posterior superior or, less commonly, in the anterior superior quadrant, or the whole ear drum may be gone. In every case, however, the perforation reaches to the meatus, from which the epidermis progresses into the middle ear. The otoscopic examination is sometimes difficult. In the innocuous chronic suppuration, the perforation is central or touches the lower border of the meatus. The mucous membrane has a pink color. If a slightly bent sound can pass up behind the border of the meatus, a cholesteatoma is probable. If the meatus is cleaned and the antrum tube frees epidermal masses from the upper parts of the middle ear, the diagnosis is certain. Those who are not sure about the results should clean the meatus and middle ear, dry it and insufflate boric acid. If the pus smells badly after a few days, a cholesteatoma is present. The chorda tympani is frequently affected. Therefore a loss of taste on one half of the tongue speaks also for a cholesteatoma.

Seuchenbekämpfung, Vienna

2: 97-195, 1925. Partial Index

**Variola Vaccine Immunity. Hammerschmidt.—p. 128.*
Histology of Epidemic Encephalitis. F. Lucksch.—p. 143.
*The Bacteriophage in Therapeutics. E. Zdansky.—p. 150.
Jaundice and Infection. E. Lauda.—p. 159.

Smallpox Vaccine Immunity.—Hammerschmidt reviews the conflicting opinions that prevail in regard to the parallel occurrence of antibody production and immunity. Jeki has thrown light on the subject recently by his discovery of a new and exaggerated antibody production after revaccination with heat-killed vaccine, the same as Paschen has reported after revaccination with virulent vaccine which yet had failed to elicit an appreciable reaction. As a new immunization with such avirulent vaccines is scarcely conceivable, Jeki assumes that this action of the heated vaccines must be regarded as a nonspecific shock phenomenon, the same as Matsuda's experience with after-treatment of animals with albumose when their virucidal antibodies seemed to be declining. It is possible that the effect of revaccination with virulent vaccine may have an analogous explanation. It is evident, in any event, that vaccine immunity and the content of the serum in virucidal substances do not have the same simple connection as is accepted for certain other infectious diseases. Certain experiences suggest that the skin may be effectually immunized while the internal organs lack adequate immunity protection, or vice versa.

The Bacteriophage in Therapeutics.—In six of twenty cases Zdansky obtained a clinical and bacteriologic cure under bacteriophage treatment of colon bacillus infection of the urinary tract, long rebellious to all other measures.

Wiener Archiv für innere Medizin, Vienna

10: 1-164 (April 15) 1925

*Chondrodystrophic Dwarfs. J. Donath and A. Vogl.—p. 1.
*Leukocytosis in Man and Dogs. A. Woronoff and J. Riskin.—p. 45.
*Dehydrocholeic Acid in Cholangeitis. Adlersberg and Neubauer.—p. 59.
Diagnostic Use of Effect of Roentgen Irradiation. J. Borak and R. Lenk.—p. 71.
Disturbances of Conduction in the Bundle. D. Scherf and C. Shookhoff.—p. 97.
*Pathology of Respiratory Metabolism. Pollitzer and Stolz.—p. 137.

Chondrodystrophic Dwarfs.—Donath and Vogl studied the spine in chondrodystrophic dwarfs. It never is normal. Apart from the well known lumbosacral saddle deformity, there are constantly malformations of the dorsolumbar region. Changes of the twelfth thoracic to the third lumbar vertebrae account for these deformities.

Leukocytosis in Man and Dog.—Woronoff and Riskin found in healthy fasting men and dogs during the day changes of leukocytes amounting to 90-150 per cent. There is no definite alimentary leukocytosis, but the number of the cells increases about the time of the expected meal.

Dehydrocholeic Acid in Cholangeitis.—Adlersberg and Neubauer utilized clinically the strong increase of bile secretion after intravenous injections of 2 gm. of the sodium salt of dehydrocholeic acid. They gained a favorable impression in cholecystitis and cholangeitis.

Pathology of Respiratory Metabolism.—Pollitzer and Stolz found that an intramuscular injection of 2 c.c. of a 5 per cent. solution of casein increases the oxygen consumption in the same individual, regardless of fever, about as much as the ingestion of 250 gm. of meat. The maximum of the parenteral reaction is reached in eight hours, of the enteral in four hours.

Wiener klinische Wochenschrift, Vienna

38: 499-524 (May 7) 1925

*Etiology of Herpes Zoster and Chickenpox. B. Lipschütz and K. Kundratitz.—p. 499.
*Irradiation in Ovarian Insufficiency. A. Szenes and J. Palugyay.—p. 503.
*Diagnosis of True Influenza. G. Spengler.—p. 507.
*Emphysema in Pulmonary Tuberculosis. E. Pick.—p. 508.
Late Results of Gastro-Enterostomy in Ulcerations of Stomach and Duodenum. H. Lehmann.—p. 509.
Zittmann's Decoctum. M. Biach.—p. 511.
Nursing in Austria. L. Moszkowicz.—p. 511.
Exophthalmic Goiter. H. Schlesinger.—p. 513.
Asphyxia of Tissues and Dystrophia of Kidneys. L. Jehle. Supplement.—pp. 1-23.

Etiology of Herpes Zoster and Chickenpox.—Lipschütz succeeded in 1920 in inoculating the rabbit cornea with the contents of vesicles of herpes zoster. The cytologic changes ("zoster bodies") were identical. Kundratitz showed that children up to the age of 5 could be inoculated with herpes zoster. The incubation was nine to fifteen days. Some of the patients had a generalized eruption with all the earmarks of chickenpox. Other children who came into contact with them contracted chickenpox. Serum from convalescents from zoster protected against chickenpox. It seems, therefore, that the relation between the two diseases is close. Febrile herpes is probably a different infection.

Irradiation of Pituitary Region in Ovarian Insufficiency.—Szenes and Palugyay report fair results in thirty-eight patients with climacteric disturbances. Great caution is necessary with the dosage.

Diagnosis of True Influenza.—Spengler emphasizes the diagnostic value of leukopenia in grave influenza.

Emphysema of Skin and Mediastinum in Pulmonary Tuberculosis.—The emphysema occurred in a patient with artificial pneumothorax, and was due to rupture of a tuberculous cavity.

Zeitschrift für Kinderheilkunde, Berlin

39: 367-463 (May 22) 1925

Size of Tonsils in Children. M. Schönberger.—p. 367.
Hypertrophied Tonsils in Infants and Children. C. Pirquet.—p. 372.
Experimental Transmission of Herpes Zoster to Man and Its Relation to Chickenpox. K. Kundratitz.—p. 379.
*Experimental Treatment with Bacteriophage. Munter and Boenheim.—p. 388.
Antirachitic Properties Imparted to Inert Fluids and Vegetables by Ultraviolet Irradiation. A. F. Hess.—p. 395.
Immunization of Children Susceptible to Diphtheria. J. Müller and H. Meyer.—p. 405.
Proteus Meningitis in an Infant. Bischoff and Brekenfeld.—p. 421.
*Treatment of Measles with Beef Serum. Nobel and Schönberger.—p. 434.
Skin Sensitiveness to Tuberculin and Protein. E. Nobel and A. Rosenblüth.—p. 439.
Age Incidence of Eczematous Conjunctivitis. I. Krasso.—p. 448.
Treatment of Encysted Pleural Empyema. W. Koelzer.—p. 456.
*Lymphangitis After Tuberculin Test. K. Parrhysius.—p. 460.
Percutaneous Hormone Treatment in Rickets and Spasmophilia. H. Buschmann.—p. 462.

Experimental Treatment with Bacteriophage.—Munter and Boenheim noted improvement in certain cases of colon bacillus cystitis in children and dysentery in infants and young children after this method of treatment. The improvement, however, could not usually be definitely ascribed to a direct curative action of the bacteriophage, partly because the infectious agents proved lysoresistant in vitro, partly because of the probability of spontaneous convalescence. The possibility of a curative effect from the bacteriophage, if only indirect, and the apparent harmlessness of the lysin seem to justify further experiments with bacteriophage therapy.

Treatment of Measles with Beef Serum.—Nobel and Schönberger conclude that attenuation of beginning measles by the injection of beef serum is uncertain. Even the inactivated serum may cause toxic disturbances in children, and beef serum sickness occurs as well as horse serum sickness. They consider the use of beef serum in children contraindicated.

Lymphangitis After Tuberculin Test.—After the intracutaneous injection of tuberculin in diagnosis in three children, Parrhysius noted the appearance of a lymphangitis simultaneously with the pronounced skin reaction. Cultural and microscopic examination of the tuberculin revealed gram-positive diplococci. The cause of the contamination, he says, was defective corking.

Zeitschrift für Krebsforschung, Berlin

22: 199-304 (April 18) 1925

*Action of Roentgen Rays on Plants. H. Komuro.—p. 199.
Suprarenals and Growth of Tumors. H. Auler.—p. 210.
Mixed Embryonal Tumors. A. J. Smirnowa-Zamkowa.—p. 218
Stimulation of Growth of Connective Tissue. O. Lasius.—p. 233.
*Maturity of Cancer and Cell Division. J. Palugyay.—p. 251.
*Surface Tension of Serum in Pregnancy and Cancer. Solowiew.—p. 265
*Reaction of Sarcoma to Foreign Body. W. Garschin.—p. 270.
*Early Appearance of Tar Cancer in Rabbits' Ears. Bittmann.—p. 278.
*Atypical Cell Proliferation in Plants Bittmann.—p. 291.
*Cancer After Inoculation with Bacteria. Blumenthal and Auler.—p. 297.
Propagation of Probable Cancer Germs. Abramowski.—p. 301.

Action of Roentgen Rays on Plants.—Komuro irradiated seeds and young plants of *Vicia faba.* Soft roentgen rays had a much stronger action than hard ones. Changes of nuclei and of the cell division appeared immediately. Tumors were also produced.

Maturity of Cancer and Cell Division.—Palugyay made cytologic studies on uterine cancers. He found that cancers which have the aspect of very little differentiated tissue, show many prophases and few mitoses. Cancers of average maturity have few prophases and many mitoses. Well differentiated cancers show few signs of division. He believes that the prophases are in reality only abortive divisions.

Surface Tension of Serum in Pregnancy and Cancer.—Solowiew found on the average a lower surface tension of the serum in pregnancy and cancer than in the controls.

Reaction of Sarcoma to Foreign Body.—Garschin introduced kieselguhr into the genital sarcomas of dogs. It produced no reaction in the cells. Only the stroma of the tumor reacted slightly. This indicates that these tumors are not a granulation tissue.

Early Appearance of Tar Cancer in Rabbits' Ears.—Bittmann attributes the rapidity of the appearance of cancer on rabbits' ears (in two to six weeks) to the preliminary removal of fat by petroleum ether before the application of the tar.

Production of Atypical Cell Proliferation in Plants.—Bittmann produced on segments of root vegetables a transplantable proliferation of cells—by daily application of 1 per cent. lactic acid. No tumefaciens bacilli were present.

Cancer After Inoculation with P. M. Strain of Bacteria.—Blumenthal and Auler publish pictures of a squamous cell cancer which they produced in two mice by intraperitoneal injection of a pure culture of their bacterial strain P. M. The tumors took at first on transplantation, but disappeared later.

Zeitschrift für Urologie, Leipzig

19: 321-400, 1925

*Tuberculosis of the Kidneys. P. Blatt.—p. 321.
*Anatomy and Physiology of Kidney Pelvis. H. Haebler.—p. 332.
*Autohemotherapy in Gonorrhea. M. A. Saigràjeff.—p. 339.
*Schramm's Phenomenon. O. A. Schwarz.—p. 350.
Vaccine Treatment of Gonorrhea. A. Heymann.—p. 355.
*Retention of Urine in Urethral Stricture. Goldberg.—p. 359.

Tuberculosis of the Kidneys.—Blatt reports on thirty operative cases with after-examination in one and a half to four and a half years, and complete recovery in twenty cases.

Anatomy and Physiology of Kidney Pelvis.—Haebler found an extremely fine, plexus-like penetration of the muscle layers with nerve fibers. Occasionally there appeared isolated, nonmedullated filaments, scattered over several muscle layers. In pure muscle fasciculi, without connective tissue, no nerve fibers were observed. No ganglion cells of the sympathetic type were disclosed in the upper third of the ureter wall. Small round or oval black formations in deeper layers of the wall of the kidney pelvis were not ganglion cells but Schwann's nuclei.

Autohemotherapy in Gonorrhea.—Saigràjeff reports on forty cases treated by this safe and painless method. The effective primary dose is 3 c.c. subcutaneously or 5 c.c. intramuscularly, the interval between injections, two to four days. In epididymitis, the treatment with own blood may reduce to twenty-four hours the time of confinement to bed.

Diagnostic Value of Schramm's Phenomenon.—Schramm pointed to the visibility in the cystoscope, in certain cases, of part of the posterior urethra or its whole course over the verumontanum to the external sphincter. He observed this phenomenon only in patients with demonstrable spinal cord disease or with a history of injury of the spinal column or cord. Schwarz says that cases with micturition disturbances of indefinite nature and no findings on urologic examination, beyond Schramm's phenomenon, are perplexing. Whether a gaping sphincter is always a sign of paralysis of the muscles of the pelvic floor (Schramm) is a question. He confirms that Schramm's phenomenon frequently affords a valuable indication of the existence of a spinal affection. When the phenomenon appears, thorough urologic examination should be made.

Retention of Urine Due to Complications of Urethral Stricture.—From four observations of retention of urine in diabetes and four in diabetes with urethral stricture, Goldberg concludes that diabetics with marked strangury, especially at night, should be catheterized, in order that retention of urine, curable in the beginning, may not be overlooked.

Zentralblatt für Gynäkologie, Leipzig

49: 1010-1056 (May 9) 1925

*Legalizing Artificial Abortion. G. Winter.—p. 1010.
*So-Called Stimulating Irradiation of Ovary. F. C. Geller.—p. 1013.
*Dermatoses in Disturbances of Ovarian Function. P. Szegö.—p. 1018.
*Intraspinal Anesthesia in Gynecology. Mandelbaum.—p. 1023.
*Development of Shoulder in Pelvic Presentation. Döderlein.—p. 1027.
Intra-Uterine Interventions in Third Stage of Labor. F. Jess.—p. 1030.
Conception with Intact Hymen. C. W. Bischoff.—p. 1034.
Artificially Lengthened Fingers for Gynecologist. v. Ott.—p. 1035.
*Measurement of Pelvic Inclination. Mandelstamm.—p. 1036.
Improved Vaginal Speculum. J. Dreyer.—p. 1039.
Intraspinal Anesthesia in Gynecology. M. Seidler.—p. 1040.
Extraperitoneal Vaginal "Small" Cesarean Section. Leibtschik.—p. 1044.

Legalizing Artificial Abortion.—Winter says that the paragraph on abortion in the draft of the new German penal code, admitting interruption of pregnancy in cases of a "present" menace to life, does not cover the indications now recognized by the profession. He pleads for an addition to the paragraph which will in unmistakable terms exculpate the physician who acts according to the accepted standards of the profession. He would not legalize induced abortion after rape, because of the extreme difficulty in establishing the rape.

So-Called Stimulating Irradiation of the Ovary.—Geller states that after weak irradiation of the ovary in rabbits the histologic picture showed no certain signs of a stimulation, but in almost every case degenerative changes were evident in the ova and follicles in all stages, without manifest or regular predilection for the ripe follicles.

Dermatoses in Disturbances of Ovarian Function.—In over eighty patients with various dermatoses, Szegö found indications of functional disturbance of the ovaries (pregnancy, amenorrhea after excision or roentgen treatment or without known cause, dysmenorrhea, oligomenorrhea, etc.). Ovarian extract was given, intravenously or intramuscularly. Improvement was usually manifest after the second or third injection. A connection between the dermatosis and the ovarian disturbance is probable, he says, if the constitution suggests impaired ovarian function; if the two conditions appear simultaneously; if the dermatosis retrogresses after treatment with ovarian extract; and if on discontinuation of the treatment and aggravation of the ovarian condition, the dermatosis also becomes more marked.

Intraspinal Anesthesia in Gynecology.—Mandelbaum concludes that this is not a fully competent substitute for inhalation anesthesia. The method is generally better borne by elderly than by young women. More sharply defined indications for it are needed. He considers the age above 60 as an indication. General anesthesia is more easily reversible than intraspinal; the advantage of the earliest possible removal of a poison from the organism is emphasized. He quotes Bumm: "The loss of consciousness at the beginning of anesthesia is a boon to women."

Development of Shoulder Girdle in Breech Presentation.—Döderlein says that, besides saving time, A. Mueller's method reduces the number of injuries to the humerus and clavicle. He points to infrequent but grave injuries to the infant's skeleton which may result from it. In one instance necropsy revealed the right clavicle dislocated, behind the sternum. The head of the bone had penetrated the tissues of the anterior mediastinum and pressed on the superior vena cava. Numerous extravasations indicated death from suffocation. He advises against forced development of the shoulder by traction on the breech. If extraction according to Mueller proves difficult, manual development of the arm affords a better outlook.

Measurement of Pelvic Inclination.—Special study of the etiology and treatment of genital prolapse has convinced Mandelstamm that slight pelvic inclination produces a tendency to retroversion, and that this creates preliminary conditions for genital ptosis on increased abdominal pressure. In patients thus affected, other signs of asthenia were also present. In women with infantile or partial development and extensive perineal tears (prolapse of the posterior vaginal wall), there was a pronounced slant of the pelvis, but marked prolapse of the genitals was rarer, and the uterus tended to anteversion. He describes his apparatus for measurement of the pelvic inclination.

Acta Scholae Medicinalis Univ., Kioto

6: 275-403, 1924. English-German Edition

Bone Transplantation and Vital Staining. B. Ogawa.—p. 275.
Photographing Minimal Changes in Pressure and Volume. K. Mori.—p. 327.
Loewe Heart Strips. II. S. Ueda.—p. 333. III.—p. 359.
*Nonsurgical Measurement of Blood Pressure. Kuraya.—p. 373.
*Bile Outflow as Symptom of Disease. K. Nakashima.—p. 389.

Nonsurgical Measurement of Blood Pressure in Rabbit.—Kuraya places the inner surface of a rabbit's ear directly under a glass plate, the external surface in contact with a rubber drum, connected by rubber tubing with a manometer. The drum consists of a thin rubber sheet stretched loosely over a funnel-shaped metal cup opening into a rubber tube with bulb. An electric lamp at the bottom of the cup allows observation of the blood stream through the glass plate, ear tissue, and rubber membrane.

Bile Outflow as Symptom of Disease of Biliary Tract.—Nakashima says that if the affection is mild, a dark, brownish-greenish bile appears at the beginning of the bile outflow or after the discharge of a little pale bile. It contains a small quantity of floccules of mucus, epithelium, and other pathologic elements, and varies in amount from 20 to 80 c.c. It is soon followed by pale bile. In cases of a severe affection the dark-colored bile alternates with the pale in intervals varying from fifteen to seventy-five minutes. The severer the affection, the shorter the interval. The symptom, he says, is caused by inflammation, dilatation of the ducts, and probably insufficiency of the sphincter of Oddi. With decreasing intervals and aggravation of the patient's condition, he advises removal of the gallbladder; with increasing intervals, the duodenal tube.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1989-2104 (May 2) 1925

*Stasis in the Blood in Inflammation. J. H. Regenbogen.—p. 1990.
*Pregnancy Toxicosis. J. C. Beker.—p. 2008.
Allen's Research on Ovarian Secretion. G. C. Nijhoff.—p. 2015.
Case of Encephalitis After Vaccination. J. R. Prakken.—p. 2018.
A Valuable Medical Incunabulum. Nuyens.—p. 2021.

Causes of Stasis in Inflamed Blood Vessels.—Regenbogen presents evidence that an abnormal ratio between the p_H of the blood and the vessel wall is responsible for the stasis in ,inflammatory conditions. All the phenomena of inflammation, he reiterates, are of a defensive nature—to wall in the focus—and of a reversible character, and are induced by the hydrogen ions generated in the necrotic tissues. Stasis can be arrested by measures to render the blood more fluid, or by measures to restore the p_H to normal figures.

Pregnancy Toxicosis.—Beker describes some cases which seem to explain pregnancy toxicosis, edema, nephritis and eclampsia as the result of disturbance in the blood circulation owing to the loss of balance between the blood circulating in the uterus and in its environment. A second important factor is the toxic substances generated as the products of the metabolism of the uterus musculature.

1: 2105-2204 (May 9) 1925

*Pseudomyxoma of the Peritoneum. T. S. Klots.—p. 2112.
Wassermann's Seroreaction in Tuberculosis. van der Hoeden.—p. 2125.
Tuberculin as Cell Stimulus. H. Verploegh.—p. 2129.
Grave Lead Poisoning, Probably from Water Tank. Bahlmann.—p. 2138.
Recurring Puerperal Inversion of Uterus. Kamberg and Bol.—p. 2141.
**Rolling of Eyeballs in Old Syphilis.* S. P. Bakker.—p. 2148.

Pseudomyxoma of the Peritoneum.—Klots urges prompt and repeated operations, reporting a case and saying that the *prognosis is not so grave as hitherto taught. Even if* a permanent cure is not possible, life can be lengthened for many years. In his patient, the recurrence was in one week, the abdomen much enlarged anew, but clinically normal conditions were restored by the second operation (while the woman was under observation).

Ocular Spasm with Syphilitic Affection Resembling Shaking Palsy.—Bakker's patient noted the parkinsonian symptoms ten years after syphilis infection, well treated at the time and five years later. Then came attacks of rolling up of the eyeballs. There was no history of epidemic encephalitis. Ewald noted this ocular spasm as a sequel of epidemic encephalitis in five cases and of paratyphoid encephalitis in another. Gowers encountered it in a case of Wilson's disease. Bakker comments that these cases show that the lesions in the midbrain of epidemic encephalitis may extend to the adjoining center controlling the upward normal movements of the eye. In sleep, the eyeballs roll up.

Finska Läkaresällskapets Handlingar, Helsingfors

67: 303-397 (April) 1925

*Autovaccine Treatment of Septicemia. E. Ryti and F. Saltzman.—p. 303.
The Physician and Compulsory Accident Insurance. B. Lönnqvist.—p. 327.
*Tuberculosis Statistics. N. Emeleus.—p. 347.
Reliability of Wassermann Test. G. Snellman.—p. 355.

Autovaccine Treatment of Septicemia, Particularly Streptococcus Septicemia.—Ryti and Saltzman injected the autogenous vaccine subcutaneously every second day (occasionally, after a pronounced reaction, every third day) in gradually increasing doses. While only fourteen cases were treated, the results of the treatment, combined with serumtherapy in the most acute cases, appeared favorable. In three of the six fatal cases other grave disorders were present besides the acute septicemia.

New Tuberculosis Statistics.—Emeleus found in 1924 that of the 1,438 employees of a Tammersfors factory living in model homes owned by the company, 4.6 per cent. had tuberculosis; of the 917 living elsewhere in the city, 6.5 per cent. In 1908, 9.24 per cent. of the 1916 workingmen examined were tuberculous.

Norsk Magazin for Lægevidenskaben, Oslo

86: 429-524 (May) 1925

Fifty-Three Operated Cases of Kidney and Ureter Calculi. P. Bull.—p. 429.
Roentgenograms in Diagnosis of Kidney and Ureter Calculi. S. A. Heyerdahl.—p. 459.
Bacillus Mesentericus Vulgatus *Found in* Abscess from Therapeutic *Injection.* E. Gundersen and E. Ziesler, Jr.—p. 473.
*Diphtheroid Rods in Blood in Intermittent Fever. E. Gundersen.—p. 477.
Insulin in General Practice. H. C. Geelmuyden.—p. 482.

Diphtheroid Rods in Blood in Fever of Unknown Origin.—The first of Gundersen's three cases of remittent fever began with a rhinitis and lasted two months, with gradual recovery. In the second, with onset following an injury to the nose, and no indication of malignant tumor or tuberculosis, death occurred in a cachectic condition two months later. The third patient, in a septic condition, with signs of endocarditis, died after two and a half weeks. In every case corynebacterium xerosis was cultivated from the blood.

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THERAPEUTIC RESEARCH *

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BOSTON

Although we have not yet reached the Golden Age of therapeutic discoveries, there are many indications that we are approaching the threshold to it. Never before in the history of medicine has so much interest been taken either in the introduction into the treatment of disease of new drugs and other therapeutic measures or in the scientific study of the action of well known old time drugs and procedures. Moreover, drugs are more easily and better prepared and standardized, and the roentgen ray and other physiotherapeutic measures further developed than in the past. It has been of interest and value to me to attempt to outline the paths along which therapeutic research should proceed in the future, and I hope that it will also interest others.

There are three important paths for progress in therapeutic knowledge: first, the discovery of new drugs and other methods of treatment; second, the determination by modern scientific investigation of the value of drugs and methods used empirically in the past, and, third, of great significance and most neglected, the study of the reaction of the person to whom the treatment is applied.

The discovery of new drugs and vaccines, antitoxins and physiotherapeutic measures is developing with greater and greater activity. It is often spectacular. The reasons for the increasing progress along this path of therapeutic investigation are three, and they are all significant. In the first place, more and more workers are in the field, because of greater interest in it; secondly, these workers are better trained than ever before; and, thirdly, there are more material resources for the work than at any previous time in the history of medicine. There need be no wonder at the increasing number of investigators—the subject is a fascinating one and the contagious example of a few enthusiasts quickly spreads. The existence of many institutes, hospitals and endowments fostering the work is well known and needs no comment. It is perhaps a little less realized that the second reason for the progress along this path of therapeutic research—namely, the training of the investigator—is of importance at least equal to and probably greater than the other two. Less must scientific advance in the treatment of disease depend on accident than it did in the past. More must progress be developed by men trained in the fundamental sciences—mathematics, physics and chemistry—as well as in the biologic sciences—bacteriology, physiology, pathology and pharmacology. Of course, to be ideal therapeutic investigators such persons must also have good clinical teaching and experience. This equipment is more demanded in the future. It was rare in the past and that is why this path has been so little trodden, with rather unusual exceptions. We can still expect chance discoveries to come and even more than in the past with more people at work now. But the results of sounder fundamental training are beginning to appear, and at least in part have produced such recent discoveries as arsphenamin, scarlet fever antitoxin, radiotherapy, insulin, and cervical sympathectomy for angina pectoris. If a person in the future wants to enter this particular path of therapeutic research with reasonable promise of success, he must be more than an intelligent inquisitive physician; he should also have a good working knowledge of bacteriology and physiology, chemistry, physics and mathematics—if not all of these, at least a goodly proportion.

For most of us who have not had an extensive or intensive training in the fundamental sciences, it is still possible to carry on therapeutic research. We may ourselves apply in the clinic drugs and measures not only newly discovered, but also long known; by careful observations we may determine to what degree and how these remedies are clinically effective. This path too, though well known, has been but little used. Here general practitioners sometimes have more opportunity than laboratory and hospital workers, and they should not neglect their chance by minimizing these opportunities and the value of their observations. There are many drugs being used empirically that have never been scientifically studied; they often seem helpful, but we are not yet sure in just what conditions or why. Other drugs once used and now almost obsolete may still have some virtue yet unknown, perhaps in some condition other than that for which they were originally given and then discarded. At one time, about a hundred years ago, digitalis was given to nearly all tuberculous patients to prevent hemorrhage and tubercle formation and then, because of its inertness, was given up; and only later, less than fifty years ago, was it rediscovered that Withering was right when he said, a hundred and fifty years ago, that it had at times a powerful effect on the heart and removed dropsy.

I shall briefly mention a few other drugs that have passed through the stages of accidental discovery, then sometimes temporary oblivion, then rediscovery and general empiric use, then unpopularity perhaps because they were considered old-fogey, and finally established by scientific proof as therapeutic remedies of value. Cod liver oil has had several crests of popularity, and yet work on it continues, to determine why it has such value. Jacob Bigelow, in a course of lec-

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* Chairman's address, read before the Section on Pharmacology and Therapeutics at the Seventy Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

tures at the Harvard Medical School seventy-five years ago, spoke as follows:

> At this age, the stock of pharmacy has become extensive. Its components are of various antiquity: of them, some like hellebore and hemlock were known to the ancients. Others, calomel, for instance, we have from the alchemists of later times. Some date their discovery to that of this hemisphere; of these, jalap, ipecac, Peruvian bark and tobacco form similar examples, while others, like croton oil, date their use since the commencement of the present century. But these are not all. There is one class, and not a small one, still to be mentioned—the medicines which were once familiarly known, then forgotten and revived again. Of such are cod liver oil, now in such repute—spoken of in old books under the name of "Ol. Jecun. Aselli"—and now first of late recommended by Dr. Williams of London, and again colchicum, known to the ancients, and then plunged into oblivion until the discovery of its specific influence in gout.

Pierre Pomet, in his fascinating "Histoire genérale des drogues," in 1694, wrote of the empiric use of several drugs which in later days were proved to be valuable by scientific tests. For example, iron and sulphur were heated together, and the resulting compound, called saffran de Mars, was given as a tonic. It was discovered that this tonic cured the pale color of girls, and in our generation it has been discovered that chlorosis is rare, probably because of the iron present in nearly all the spring tonics sold as prepared medicines or on physicians' prescriptions. Pomet recommended calomel as a very excellent remedy to cure secret maladies (undoubtedly syphilis) and pediculosis, and also as a purgative. Since his day calomel has also been found to be a powerful diuretic, especially in obstinate edema. Many of our own time have forgotten this, and we find enthusiasm in the use of the new mercury preparation novasurol, with little appreciation of the diuretic properties of the old mercury salt calomel.

Another drug discussed by Pomet, in 1694, was ipecacuanha, the root of which was used for the cure of dysentery. It was introduced from Brazil into Europe about 1675—250 years ago. As long ago as 1850 its alkaloid emetin was known, but only recently has its specific effect in amebic dysentery been proved.

Cinchona bark, accidentally found by the Peruvians to stop certain fevers, was introduced by the Spaniards into Europe in the sixteenth century. The cure by it of the fever in the case of the Countess of Cinchon gave it its name. Years afterward, quinin and other alkaloids were isolated and found to be specific in malaria. During the past century quinin was given with digitalis in some cases of heart disease in Europe. It was thought that it exerted some beneficial effect. Then physicians, seeing no reason why quinin should be useful in the treatment of heart trouble, advocated its abandonment. But now we know that these cinchona alkaloids, especially quinidin, do have a beneficial specific effect on the heart to prevent or to stop in selected cases the distressing arrhythmia called auricular fibrillation. It is possible that the frequent use of quinin in hyperthyroidism in the past may have had the same effect, but its employment was wholly empiric.

It is not necessary to speak of other examples of the accidental, the empiric and the scientific use of drugs in the history of therapeutics. Enough has been said to illustrate the interesting developments of the past and to stimulate further investigation in the future. One example may be cited with regard to physiotherapy. For many hundreds of years, the spa or bath treatment of disease, especially of chronic ailments, has been popular. The claims of the proprietors of these baths and resorts have often been ridiculously extravagant, and yet there is no question about their success in many cases. Why has there been this success? Mackenzie and others have sometimes ridiculed the idea that the waters—sulphur, alkaline and others—had very special virtue either by internal or by external use. They were probably right; but there was some reason for the improvement in many cases treated at these places. That reason, not widely advertised, is not difficult to discover. A regulation of habits of life, with relief from mental and physical strain in new and pleasant surroundings under careful medical supervision, is the obvious answer to this question. Whenever any physiotherapeutic measure, such as the treatment at baths and massage, is successful for centuries there must be some reason for that success, and it does not help to shrug our shoulders and denounce the method without trying to discover why it has helped.

Finally, we come to the third path for therapeutic research. Of that we know so little that a few words will suffice to mention its existence and importance. In the study of symptoms and diagnosis, every medical graduate when he begins to practice medicine discovers quickly enough that there has been a great gap in his medical training and that gap he must gradually fill by slow and long experience himself. That gap consists of the study of the reaction of different individual types of man to pathologic processes and stimuli. Animal pathology here is of little avail except roughly to point the way. Accuracy beyond the crude beginnings of the subject taught and learned in the animal experimental laboratory and the necropsy room must come from dealing with all types of man afflicted with all kinds and degrees of disease. No two persons react in exactly the same way in symptoms, functional capacity or duration of life, to the same disease of the same severity. In a study of heart pain, particularly, was this brought forcibly to my attention.

In the study of symptoms and their importance in diagnosis we have merely scratched the surface. And the same element enters into the treatment of disease. Here lies a tremendously important unexplored path, which is known to the practitioners of medicine particularly but is little studied. We talk, for example, about idiosyncrasy to drugs (as to morphin or quinin), or other therapeutic measures in health and in disease; but that means little except that we do in a vague way recognize that there is such a problem. Of equal importance in therapy, then, with the pathologic condition to be treated and the drug to be used, whether specific or not, is the individual; the average dose, pharmacologic action in animals and the usual course in man are all helpful guide posts, but they are very crude ones. We must establish in the future more accurate directions than we have at present when we have to treat a particular person with a certain family history, a certain past history, and present constitutional peculiarities. Research is badly needed here, and it must perforce be chiefly on man and in the practice of medicine.

Importance of Clinical Data in Diagnosis.—While special aids to diagnosis may play an important rôle in some cases in making or clinching a diagnosis, they can only supplement, but never replace, the clinical data obtained from an accurate history and a careful physical examination. The latter must ever remain our surest guides to diagnosis, and on them we will mainly rely for the correct interpretation of any given case.—D. P. D. Wilkie: *Brit. M. J.* **2:**163 (Aug. 2, 1924.

THE HABIT OF ATTENDING MEDICAL MEETINGS *

MARCUS FEINGOLD, M.D.
NEW ORLEANS

People in all walks of life and all kinds of occupations gather periodically for the purpose of discussing problems common to the members of these groups, to gain experience and knowledge from the experience of others and thus to improve the affairs of each participant. In a profession such as ours, whose principal and primary object is to help and benefit our fellow men, this gain in knowledge is almost incumbent on us, because it is so essential for the good of those entrusted to our care. He who attends meetings regularly, even if he does not impart his experience to others, must leave a better man, better by the knowledge he has absorbed while listening to others. How much more valuable to the community is he who imparts his knowledge and thoughts at the meeting in a discussion or in a paper. He gives to others his thoughts and his knowledge, but he becomes richer himself because of the intensity of thinking and because of the preparations that are necessary prerequisites of a paper or even of remarks in discussion.

Presence at a meeting, hearing discussions and papers not only is of value to the beginner, but has been considered of importance to our masters. Naturally, not all that is transacted in every meeting is of the kind that signifies progress and betterment; some things presented may be of the kind that should be avoided and deprecated. But there is good also in listening to this kind because it teaches how to avoid the mistakes of others. But, somebody would say, I can read all that transpires at a meeting in the transactions. This is true, and having the printed transaction has the advantage that they can be consulted and studied with absolute surety at any moment desired. True as all this is, nobody can deny that most of us are more deeply impressed by seeing or hearing a thing presented by the author than by the mere reading of it; the impression is more vivid and lasting, and the time spent in listening at a meeting is thus more profitably spent than it would be by reading the same subject matter.

Presence at meetings produces, I am sure, in different members of the audience, as it has in me, various emotions. These emotions must apparently fall into one or more of the following subdivisions: admiration for the subject or the speaker; feeling of one's own inferiority in having done so little; the desire to imitate that piece of work and that method; the determination not to overlook this or that in the future, and regrets at having failed to observe this and that.

Wishes, regrets, determinations like these are bound to have only the most beneficial effects on our future activities, because they are stimulating to better performance of duty.

When we stay at home and work in our own circle only, good work might be done and creditable, but our accomplishments, our thoughts, our ideals, are slow to reach the outside world. The good we may have done has had only little influence, and, for the same reason, recognition by our fellow workers is sure to come only very slowly. At meetings, when we allow others to peep into our minds, a quicker estimate and appreciation of our value is gained, the influence for good spreads quicker and wider. Our leaders, the men who have honored and exalted our profession, all of them were regular in their attendance at meetings, spreading the knowledge they possessed and learning from the humblest and youngest in the meeting.

Attendance at meetings has often led to ties of the most fruitful and warmest friendships among medical men the world over. History of medicine, and of our branch especially, contains many records of the wonderful effects of exchange of thoughts among friendly spirits, just as these medical meetings.

Attendance at meetings must not be limited to those of our immediate circles. The larger the group of individuals banded together, the greater is the probability of valuable and stimulating contributions at that meeting.

Medical Building.

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* Chairman's address, read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

RAYNAUD'S DISEASE COMPLICATED WITH GASTRIC ULCER

REPORT OF CASE *

JULIUS FRIEDENWALD, M.D.
AND
WILLIAM S. LOVE, Jr., M.D.
BALTIMORE

It has been frequently pointed out that in the study of the etiology of peptic ulcer one cannot be content with viewing this affection simply as a local disease limited to the stomach and duodenum, but that some systemic disturbance may be largely accountable for the chronicity of the local manifestation. Whatever the remote cause may be, whether due to infection, disturbances of the nervous or endocrine system, anemia, syphilis or other systemic conditions, the ultimate result consists in a localized destruction of the mucous membrane varying in degree according to its chronicity, surrounded by undermined edges with proliferation of connective tissue, thickened walls, and a base consisting largely of a thin layer of muscularis or somewhat thickened serosa. It has also been demontrated by Smithies, and more recently by Crohn, that chronicity bears but little relation to the time element in the formation of ulcer and that chronic ulcers may form in even as comparatively a short period as two or three weeks.

In the local disturbance entering into the production of ulcer, the vascular supply in the stomach below the mucous membrane plays a most important rôle; for while the ulcers of the young are to a great extent due to infection and trauma, those of the old are caused by arteriosclerosis and vascular degeneration.

Konjetzny [1] has recently pointed out that, as a result of the vascular changes, gastritis or duodenitis is produced. The gastritis is most pronounced at the antrum in the region of the pyloric glands and the adjacent fundus. Following this process, small and large funnel shaped mucosal defects are noted. The fact that smaller and larger mucosal defects and typical ulcers are situated side by side in the stomach and duodenum, in these cases, indicates that they are different stages of the same process.

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* From the Gastro-Enterological Clinic of the Department of Medicine of the University of Maryland.

[1] Konjetzny, G. E.: The Etiology and Surgery of Ulcer of the Stomach or of the Duodenum, Arch. f. klin. Chir. 133: 559 (Nov. 24) 1924.

In a recent publication, Aschoff[2] concludes that erosions of the stomach, from which chronic ulcers frequently take their origin, are usually produced by circulatory disturbances. These may be directly or indirectly produced through spastic contractions of the musculature of the stomach. In certain areas (fundus), venous stasis and the spasmodic contractions play a most important rôle, while in others (gastric pathway), spastic contractions together with arterial blockings (embolic or arteriosclerotic) are largely concerned in the production of the necrotic areas in the mucosa.

In connection with the vascular changes that take place in the stomach in ulcer, it is interesting to note that in Raynaud's disease, in which vascular alteration likewise occurs especially in the extremities as well as in the internal organs, a disturbance of the local circulation with interference of the function of the extremities takes place with loss of vitality followed by necrosis. The pathogenesis of this disease is attributed by the majority of authorities to a vasomotor spasm, though others attribute it to affections of either the central or the peripheral nervous system. Burger, however, is unwilling to accept the vascular origin of Raynaud's disease and attributes the trophic and vasomotor disturbance primarily to the irritative and exhaustive process, as of the sympathetic nervous system. As visceral disturbances of this affection, attention must be directed to the attacks of hemoglobinuria and abdominal colic occurring in this disease.

Results of a Fractional Test Meal

	Total Acidity	Free Hydrochloric Acid
15 minutes	21	11
30 minutes	39	25
45 minutes	55	30
1 hour	66	53
1 hour 15 minutes	68	55
1 hour 30 minutes	70	68
1 hour 45 minutes	70	62
2 hours	70	59
2 hours 30 minutes	45	40
3 hours	23	17

Whether any close relation exists between the ultimate vascular changes occurring in ulcer and in Raynaud's disease or not, the following instance of Raynaud's disease complicated with gastric ulcer is of especial interest.

REPORT OF CASE

History.—F. S., a man, aged 38, was first admitted to the wards of the University Hospital, Feb. 11, 1924, under the service of Dr. M. C. Pincoffs, with the complaint of a drawing sensation and pain in the feet, especially in the stump of two toes that had been amputated. The patient had had the usual diseases of children. At the age of 2 years he was affected with anterior poliomyelitis, followed by a partial paralysis of the right leg. He had not had scarlet fever, diphtheria, rheumatic fever or malaria. He enjoyed good health until 1918, when he had an attack of influenza extending over a period of two weeks. He had never suffered from any sore throat or sinus involvement. He had always been addicted to excessive smoking and coffee drinking. Alcohol had been taken moderately.

Present Illness.—The patient noted the onset of pains in his toes and fingers, beginning several years before, and especially in cold weather. This became more marked in the left side. He observed that his fingers would become quite white at the tips, would tingle and burn, and would become bluish, and finally again turn to normal. These attacks would continue for from fifteen minutes to an hour. He then developed a drawing, tingling sensation in the toes of his left foot, especially the great and small toes. The toes became gangrenous, and in June, 1923, were amputated. Following the operation, the stump of the great toe showed no tendency to heal, and an ulcer developed. During this period he developed a drawing, painful sensation in his left foot, more marked along the amputated stumps. At the time of his entrance into the hospital, it was observed that the fingers of his left hand would become quite white at the tips when exposed to cold, such as ice water, followed by a dusky cyanosis which would finally disappear and return again to normal. There was no evidence present of gangrene of the fingers. There was, however, a small unhealed ulcer on the amputated stump of the great toe of the left foot. The general physical examination at this time was essentially negative with the exception of the abnormalities already noted, including an atrophied right leg following an infantile paralysis.

Treatment and Course.—The diagnosis of Raynaud's disease was made, and a periarterial sympathectomy advised and performed about the left femoral artery. The patient was discharged from the hospital, April 24, 1924, improved. Following his discharge, the pain in the left leg had decreased markedly, but there still remained a drawing sensation which was constantly present. The left foot continued to perspire frequently and profusely. There were periods of feeling of heat in the leg, followed by chilliness. The middle and little finger of the left hand tingled at the tips and often became dead white in cold weather, followed later by cyanosis.

About two months previous to his second admission, the patient began to complain of digestive disturbances. Pain was noted in the epigastrium appearing about an hour following meals. His appetite remained good, the bowels normal. Following this period, attacks of vomiting occurred several hours after meals; and from this time on there was almost constant indigestion in the form of pain and discomfort, occurring several hours following meals, acid eructations, fulness and distention in the abdomen. There was a history neither of hematemesis nor of melena.

Second Admission.—The physical examination when the patient entered the hospital, Nov. 4, 1924, was essentially negative, except for a moderate pyorrhea and the presence of the stumps of the amputated toes already noted. The ulcerated area on the amputated stump of the great toe had healed. The dorsalis pedis pulsation was slight on both feet. There was no evidence of peripheral arteriosclerosis. The blood pressure was 150 systolic, and 90 diastolic in both arms. There was present an atrophy of the right leg. The second toe of the left foot was cold and presented a purplish hue, and there was present a callous deposit at the tip of the toe. The entire extremity was cold and moist.

The abdomen was soft and relaxed; the liver and spleen were not palpable; there were no masses or enlargements present. A tender epigastric area was constantly observed; no tenderness was noted elsewhere.

Laboratory Findings.—Numerous specimens of the urine were examined and always found normal. An examination of the blood revealed: red blood cells, 4,900,000; white blood cells, 7,500; hemoglobin, 80 per cent.; differential count, normal. The results of a Wassermann test were negative. The blood chemistry was normal. The spinal fluid presented a negative Wassermann reaction and was otherwise normal. The stool was normal in consistency and color, and contained no parasites or mucus. Repeated examinations on a meat-free diet revealed the constant presence of occult blood.

A fractional test meal presented a persistent hyperchlorhydria. The gastro-intestinal roentgen-ray examination revealed a persistent defect at the pylorus which was partially obstructed. There was also present a marked spasticity of the pylorus, hour glass formation of the stomach, and six hour retention.

The diagnosis of pyloric ulcer with partial obstruction was made.

CONCLUSIONS

This case presents a typical instance of Raynaud's disease complicated with gastric ulcer. While it is most difficult to demonstrate a definite relationship existing between the two affections as occurring in the same patient, it is extremely interesting to note, and it is quite possible to conceive, that both may have originated in a vascular spasm. That similar spastic manifestations of the blood vessels occur in the internal organs in Raynaud's disease is revealed in the well observed attacks of hemoglobinuria and of abdominal colic noted at times in this affection.

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[2] Aschoff, Ludwig: Lectures on Pathology, New York, Paul B. Hoeber, 1924.

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SURGICAL DRAINAGE IN INFECTION OF THE LIVER, BILE DUCTS AND GALLBLADDER *

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The pathology of the gallbladder has claimed a large interest in the life of the clinical surgeon. For obvious reasons, critical and terminal symptoms were those which made the earliest and most demanding claim. These urgent conditions were those associated with gallstones and their infective complexes—septic cholecystitis, cholangeitis, necrotic edema and perforation.

As the pathology of the vermiform appendix was studied and more or less effectively dealt with, a singularly misleading analogy crept into the clinical discussion of the relative infective conditions found in the gallbladder and appendix. This seriously retarded the correct interpretation of the pathology of the gallbladder and its associated structures.

It focused attention on a viscus whose source of infection, we were later to learn, might be quite remote from it. Through this error endless controversies have arisen, giving an exaggerated importance to an incidental and secondary infection, and overlooking the major and more important pathologic entity in the picture.

There have been many casual observations noted in the early literature of important changes in the liver, associated with infection of the gallbladder and bile ducts. These have been of rather more than historical value, disclosing, as they do, the keen analytic thought of the master minds who made them. We have room here for the mention of but a few of them.

As early as 1888, Riedel described a thick edged, tonguelike process of the liver which was a true chronic hepatitis and which from that time on was described as Riedel's lobe. Charcot, in 1892, noted enlargement of the liver in cases of gallstones. Langenbach believed that this enlargement was due to obstruction of the common duct, while Fink expressed his belief that in every case of infection of the bile tract the liver would be found enlarged.

Mayo-Robson, who was first to describe chronic pancreatitis due to obstruction of the choledochus below the emergence of the pancreatic ducts, found the liver greatly enlarged in infective cholangeitis, and believed that this might be complicated with cholecystitis and general hepatitis.

More than twenty years ago, Cushing conducted a series of experiments to discover the course through which infection was transmitted to the gallbladder in typhoid fever. Since then, many experimental studies have been made to determine whether this infection might not be from clumps of bacteria swept through the blood current from distant foci of infection to the wall of the gallbladder and the parenchyma of the liver.

Koch and Chiarolanza, after a long series of experiments, reached the conclusion that the course of this infection was hematogenous.

Letienne, Chiari, Girodi and Pawlowsky, though differing in their methods of study, arrived at a substantially similar agreement, that the entrance of bacteria into the bile tract was embolic.

Rosenow, in 1916, after a series of experimental studies in the production of cholecystitis and gallstones, concluded that the wall of the gallbladder was infected hematogenously.

None of these studies, however, offered any suggestion as to what part the liver shared in the infection of the bile tract.

It remained for Evarts A. Graham to conceive and systematically work out a series of experimental studies on the lower animals and clinical surgical operations on the pathologic human subject, to determine the source of bile tract, gallbladder and pancreatic infections. His first notable contribution was before the Chicago Surgical Society in December, 1917, when he reported a series of experimental studies on "Hepatitis: a Constant Accompaniment of Cholecystitis."

This proved to be the inauguration of a systematic study, later to be joined in by Peterman and Priest, of "The Association of Hepatitis with Experimental Cholecystitis and Its Bearing on the Pathogenesis of Cholecystitis in the Human."

Peterman made a later contribution on experimental studies on "Cholecystitis and Its Complications."

I have not time or space to quote extendedly from these studies, but they are so recent and outstanding in conclusive evidence that they may be set down as an authoritative guide for the surgeon in determining what procedure he shall adopt in this complicated field.

Graham found in thirty cases of biliary tract disease a distinct enlargement of the liver in twenty-six, or 87 per cent. In acute and subacute cholecystitis, he found microscopic evidence of inflammation in the liver. There was infiltration of leukocytes in the interlobular or periportal sheaths, and, in severe types, extension to the parenchyma of the lobules, with edema, necrosis and fat infiltration. Cultures from liver tissue and bile in the gallbladder showed the same organism in the two.

In chronic cholecystitis, the liver resembled early cirrhosis. The inflammatory reaction was chiefly pericholangeitis. He believed that the gross enlargement of the liver was due usually to edema, and that the size returned to practically normal after appropriate surgery.

In obscure or doubtful cases of bile tract disease, the presence of an enlarged liver is most significant.

Inspired by the study by Sudler of the lymphatic distribution of the gallbladder, Peterman showed that not only is the infection of the gallbladder hematogenous through the portal system in which the liver coincidently shares, but also that this infection may occur through the lymph vessels, and that there is a lymphogenous as well as a hematogenous origin of cholecystitis. As a prelude to his own experimental studies, he cites a voluminous bibliography covering more than thirty years of clinical and experimental observation on the infection of the gallbladder, bile ducts and liver. His conclusion is that "cholecystitis probably begins in most instances as an infection within the wall of the gallbladder and doubtless is secondary to hepatitis. This

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infection may be acquired from the appendix, or intestines (typhoid, dysentery), or it may be secondary to any other infectious focus within the body. The infection may then spread easily by the lymph stream to the wall of the gallbladder, and the complications then follow."

The final conclusion of this group of clinical surgeons is that "the emphasis so commonly placed on the appearance and changes in the mucosa of the gallbladder would seem to be misdirected."

What appraisement of these investigations are we willing, as clinical surgeons, to concede? Is it not a fact that much of our work on the gallbladder and bile tract has been founded on a very casual and superficial knowledge of the pathologic condition there? If not, why is it that cholecystectomies so often result in disappointment to our patients and ourselves? For a long time, there has been a conviction in the minds of many surgeons and internists that the results obtained from the surgery commonly done on the bile tract scarcely justify the hazard, pain and expense. Of course, I am not referring here to the acutely septic or obstructive types, which are emergent and must be radically dealt with.

If these experiments and clinical studies mean anything to us, then we should conform our surgery to meet their demands.

Does a cholecystectomy without drainage meet these requirements, in a liver and bile tract turgid and edematous from a prolonged low grade infection? When the edge of the liver is thick and rounded, and the parenchyma rigid and inflexible from edema; when the gallbladder has a thick wall, is contracted in size, and of a grayish yellow, opaque color, whether gallstones are present or not, the gallbladder should be removed, and the bile tract and liver drained. Cholagogues should be administered to facilitate this drainage, and the tube should be retained long enough for the bile to become comparatively free from bacteria.

Two years ago in the surgical section of the California State Medical Association, I suggested a simple and practical technic for establishing this drainage. It was also discussed informally on the following day in this section at the San Francisco session. The method has proved so satisfactory in chronic infective hepatitis and cholecystitis that I have adopted it as a routine technic. In all cases, before proceeding with the work on the gallbladder, the appendix is removed, any adhesions about the terminal ileum and hepatic flexure of the colon are removed, and the raw surface is turned in.

The gallbladder is dissected free from the liver as in an ordinary cholecystectomy, but, instead of tying off the the cystic duct, I clamp and cut away the gallbladder 3 cm. from the choledochus. The cystic artery is located and tied separately.

The funnel and the cystic and common ducts are explored for any stones that may be there. If the mucosa strips easily, a half inch cuff is removed from the top of the funnel. A small, firm-walled rubber tube is now tied in place with two forty-day chromic catgut ligatures, with the end of the tube a centimeter proximal to the common duct. The rough edge of the gallbladder stump may be either turned in or covered with omentum. The denuded bed from which the gallbladder has been dissected is covered in by flaps in the usual way. The drainage is maintained for from twenty-five to thirty-five days, as repeated cultures may indicate. Care must be exercised to prevent dehydration from excessive drainage. As a precaution the tube is clamped at intervals, chiefly at night, if the drainage exceeds 8 or 10 ounces in twenty-four hours. As a further precaution against dehydration, an abundance of water is given by mouth and by hypodermocylsis.

This operation may be done rapidly and without danger of injury to the common duct. It is free from the objections that attend Kehr's drainage of the common hepatic duct, as there is no tube in the common duct to produce pressure-ulceration and subsequent stricture, a surgical tragedy always imminent after tubal drainage of this duct. It disposes of the tiresome controversy on cholecystostomy and cholecystectomy. It is a cholecystectomy, and accomplishes all and more than the usual cholecstostomy does in the drainage of the common and hepatic ducts. No infected gallbladder is left behind for future complications.

Best of all, it drains and reduces the infection in the liver and pancreas, the raison d'être of practically 90 per cent. of gallbladder surgery.

I recommend this operation to the consideration of surgeons in the belief that it is founded on sound principles and is applicable to all conditions save cysticus, necrotic edema and gangrene, and because I cannot escape the conviction that our hope of success in the future treatment of infection of the liver, pancreas and bile tract will lie in the rational application of drainage.

Merritt Building.

ALTERATIONS OF BILE PIGMENT METABOLISM IN BILIARY TRACT DISEASE *

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The surgeon is frequently called on to perform operations on the extrahepatic bile passages without adequate knowledge of the extent of the hepatic lesion. Too often emphasis is placed on the disease of the gallbladder or common duct only, without estimating the associated hepatic damage. It has seemed to us that the extent of hepatic damage in all surgical lesions of the biliary apparatus should be determined, previous to operation, in the hope that some light might be thrown on the operative prognosis and the end-result.

An accurate estimation of hepatic damage is complicated and complex because of the manifold functions of the liver. We have, therefore, confined ourselves in this study to an investigation of the pigment metabolism of the liver. We realize that this presents only one aspect of the subject, but we believe that if this function shows any alteration, in the absence of gross obstruction, it is probable that actual liver damage is present.

In cases of common duct obstruction, estimation of the blood bilirubin offers a means of gaging the grade of obstruction.

Sudler, in 1901, published a careful anatomic study of the lymphatics of the gallbladder and showed that these had a direct and intimate connection with those of the

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* From Surgical Division B and the William Pepper Laboratory of Clinical Medicine, University Hospital.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

liver and, in 1904, one of us called attention to the possible connection of cholecystitis and hepatitis, because of the close lymphatic connection between the gallbladder and the liver. Graham and his associates began publishing in 1918 the results of the splendid series of investigations on the association of hepatitis and cholecystitis, and showed that it is possible for hepatitis to cause cholecystitis and vice versa.

When the infection of the bile passages is mild or of short duration, the actual hepatic damage that can be demonstrated by present known tests is negligible although microscopic examination of the sections of the liver may show definite lesions. The absence of functional derangement can readily be explained by the great reserve power of the liver. In long standing or hyperacute types of inflammation, definite functional derangement is to be expected and usually can be demonstrated.

Jaundice has long been recognized as a symptom of liver disease. This sign is readily discernible in cases presenting the grosser lesions of the biliary apparatus, such as common duct obstruction (from stone or tumor), or in very advanced disease of the liver itself. It is only within recent times that our attention has been directed to latent jaundice; that is, a preicteroid state with an increase of bile pigment in the blood. This condition of early "blood jaundice" is comparable to the finding of an increase of blood sugar before sugar appears in the urine.

In 1918, van den Bergh published his monograph concerned with the investigation of bile pigment in the blood, and he described a method for estimating bilirubin in the serum in a dilution as high as 1 mg. per liter, or 1 : 1,000,000. Basing the theory on the work of Kupffer, Aschoff and others on the function of the reticulo-endothelial system, van den Bergh and McNee have developed an interpretation of the two types of jaundice, obstructive and nonobstructive, which, while unproved experimentally, is in accord with our clinical observations.

Bilirubin may be formed outside the liver. The experiments proving this statement were not entirely conclusive until the work of Mann finally settled the matter. McNee follows Aschoff in believing that cells of the reticulo-endothelial system elaborate the bile pigment. These cells occur in the liver, spleen, blood vessels and in other parts of the body, the larger portion being found in the walls of the blood sinuses of the liver and known as Kupffer cells. But even though present in the liver, these cells should be regarded as extrahepatic and related to the entire system. The polygonal liver cells probably play no part in this synthesis. The bilirubin may simply pass through them, to be excreted in the bile, or it may be chemically altered during a secretory process.

McNee and van den Bergh have divided jaundice into three groups: 1. Bile pigment formed normally by the reticulo-endothelial system and passed on normally through the polygonal cells but obstructed in the ducts. The bilirubin found in the blood in this type has passed through the liver cells into the bile, and then because of the blockage has reentered the blood in association with the other constituents of the bile. The patient suffers from what has long been called cholemia. 2. Bile pigment formed normally but unable to pass, owing to damage to the polygonal cells, as from toxemia or infection. It is really a hyperbilirubinemia. 3. Hyperbilirubinemia due to excessive blood destruction and the formation of bilirubin in such excessive amounts that the polygonal cells are not able to excrete or secrete it rapidly enough. This type is seen in the hemolytic ictero-anemias.

It is the second group, hyperbilirubinemia due to damage of the liver cells, with which we are concerned in hepatitis. We have chosen the van den Bergh test to estimate the amount of bilirubin in the blood, because we believe it to be the most accurate method available at the present time. We think it is more accurate than the Meulengracht test.

The van den Bergh test is composed of two parts, one of which, the indirect, is a quantitative test, measuring the amount of bilirubin in a known amount of blood serum, and the other, the direct, a reaction differentiating between the bilirubin remaining in the blood serum and that which has reentered it from the bile. The indirect test is reported in units, one unit being equal to 5 mg. of bilirubin in 1 liter of blood. The normal bilirubin reading is from 0.2 to 0.6 unit, or from 1 to 3 mg. per liter.

The direct reaction depends on the time of development of the maximum color, and is reported as immediate, which indicates obstruction, or delayed or negative, which indicates the presence of the hemolytic type of bilirubin. In the absence of increased hemolysis, the delayed or negative reaction indicates retardation of bilirubin excretion.

The bilirubin content of the blood was studied in twenty-eight cases which subsequently were brought to operation. In eighteen cases, a section of the liver was removed at the time of operation for microscopic study. In two cases, the section removed was close to the gallbladder, but in the other sixteen it was taken from a point distant from the gallbladder.

Of the twenty-eight cases, three revealed simple cholecystitis with a thickened gallbladder but no stones. In two of these the blood bilirubin was normal. The third case was one of long standing cardiac disease; the section of the liver did not show any inflammatory change. Parenthetically, it might be noted that in a group of twenty cases previously studied by one of us (E. G. R.) on the medical division, nine were thought to be chronic cholecystitis without stones and in all a normal blood bilirubin content was found, with the exception of one case, which gave a reading of 0.7 unit.

Twelve cases at operation presented multiple calculi. Nine of these cases showed a hyperbilirubinemia, while the others were high normal. The symptoms in this group had been present from many months to many years. Such cases usually indicate a chronic infective process, and we believed that this should be evident in the sections of liver removed at operation, and so it proved.

The results of the indirect van den Bergh reaction are also important. The cases fall into two groups: Those considerably above normal, that is, one unit or above, and those whose reading is from top normal to one. It is quite possible that in the first group there existed a primary hepatitis with a secondary cholecystitis, perhaps an initial portal infection of the liver; while in the second group, the primary infection may have occurred in the gallbladder, with secondary invasion of the liver through the lymphatics.

In three cases, single metabolic stones were found at operation. The van den Bergh readings before operation were normal in these cases. In only one case was a section of the liver removed, and this, on microscopic examination, showed none of the signs of inflammation.

This is apparently in accord with the present conception of the noninfectious nature of cholesterin stones.

The blood bilirubin was estimated in eleven cases of common duct obstruction. In seven of these the obstruction was due to a stone. In one it was due to pancreatitis, in one to carcinoma of the papilla of Vater, in one to extrahepatic carcinoma occluding the common duct, while in the last the obstruction was due to a stricture following injury to the common duct.

All of these cases showed a marked increase of bilirubin in the blood, and the direct reaction was that of obstructive jaundice. In several of the cases in which the examination was repeated at intervals after the operation, the bilirubin content declined, but did not return to within normal limits. The direct reaction changed from the immediate or the obstructive type to the delayed type. We interpreted this as an evidence of residual hepatic damage.

One patient, not included in this series, illustrates the value of the differentiation possible between obstructive and hemolytic jaundice. The patient had been operated on elsewhere three years previously and a splenectomy performed for supposed Banti's disease. The patient was admitted to our hospital with jaundice and upper abdominal symptoms characteristic of gallbladder disease. It was thought that perhaps the first diagnosis might have been hemolyticictero-anemia associated with stones. The van den Bergh test, however, showed hyperbilirubinemia of the hemolytic type. This case occurred when we were not sufficiently sure of the test to place sufficient reliance on it. Operation was performed, but no disease of the gallbladder was found.

The estimation of bilirubin in the blood has been of value in indicating the time at which common duct drainage may be removed with safety. We usually continue drainage until the bile appears physically normal. The tube is then clamped and the appearance of the stools noted. We now find that the test is of extreme value in showing whether or not the blood bilirubin increases after clamping the external drainage. If so, the obstruction still persists, and the drainage should be continued.

CONCLUSION

We feel that the van den Bergh test offers a promising field for investigation of pigment metabolism, and we are offering this study merely as a preliminary report. The results are suggestive of its possibilities in estimating the extent and permanence of hepatic cell damage.

Health Education.—The term "physical education" was formerly associated in the minds of many persons with the purely physical training activities. To make it include such activities as medical supervision and health habit training and instruction, there will need to be a new conception of the meaning of the term. The modern movement in health education has developed a number of activities which are deemed essential to a comprehensive health program. The present tendency is for such a program to include health training and instruction; physical training as related to health; health supervision of children and teachers to include daily health inspection; health examinations and health correction; preparation of teachers for health training and instruction; the hygienic arrangement and administration of the school program; mental hygiene, and hygiene of the school plant. This conception is in marked contrast with the old idea of health teaching, which gave only a stereotyped study from textbooks on physiology and anatomy with its manikins.—Harman, M. H., and Clark, Taliaferro: Study of Courses in Health Education, Public Health Bulletin, U. S. Public Health Service, April, 1925.

SURGICAL PROCEDURES IN JAUNDICED PATIENTS *

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Jaundice is a symptom of a condition in which bile escapes from its normal channels into the body tissues and stains them yellow or green. For many years the problems presented by the presence of jaundice have been studied with a great deal of interest and enthusiasm, but just within the last year or two new conclusions have been reached by several investigators from which much help is expected. The most recent studies concern hepatic function and the metabolism of bile pigment.

McNee[1] has thrown much light on the construction of the lobule of the liver and the relationship of the small bile duct to the portal veins and hepatic arteries, and his investigations have clarified our conception of the Kupffer cells, which make up the reticulo-endothelial system of the liver. McNee's experimental production of jaundice in birds seems to show that the hemoglobin is broken down and the bile pigment elaborated by the endothelial cells lying between the bile duct and veins, and not by the polygonal cells of the liver. Although these endothelial cells are a part of the hepatic structure, they also belong to the reticulo-endothelial system of Aschoff. The remaining portion of the system, the spleen, bone marrow, and lining of the serous cavities, is composed of the same endothelial cells.

Aschoff's[2] work on the reticulo-endothelial system is the foundation for the newer ideas regarding the formation of bile pigment outside the liver. There has been considerable controversy over this question, but Mann has definitely shown in his studies of hepatectomy in animals that considerable amounts of bile pigment are formed without the aid of the liver. Dehepatized dogs become jaundiced within three hours after hepatectomy, and the urine contains bile pigments. Within six hours, the normally colorless plasma of these animals shows a positive icteric tint, indicating the presence of bilirubin. The plasma becomes progressively more yellow, and within fifteen hours after extirpation of the liver, the sclerotics and mucous membranes are definitely yellow. The fat throughout the body is also found to be bile stained. All the chemical tests for bilirubin give a positive reaction, showing pigment in the urine, blood and fat. Mann and Bollman[3] feel that the chemical tests for bilirubin are not absolutely specific, but none of the substances that might give a positive reaction were found in the urine or blood of the animals.

Sheard, in the Section on Physics, Mayo Clinic, tried out a spectroscopic method for the determination of bilirubin, and with it has made some very interesting observations regarding the metabolism of bile pigment. Bile pigment from the gallbladder is the same as that found in the blood of jaundiced animals, whether jaundice is produced by obstruction of the bile tract with extirpation of the gallbladder or by extirpation of the liver. The amount of bilirubin formed in the absence of the liver is sufficient to justify the belief that to a large extent the liver is an excretory organ for bile pigment, just as the kidney is for urea. The estimation of bilirubin in the blood and other fluids by the spectroscopic method tallies with the quantitative measurement by the van den Bergh method.[4] Many tests have been devised to measure hepatic function, and some may yet prove to be very useful; but, so far as we know, present methods aid very little in determining a jaundiced patient's ability to withstand operative procedure. We have tested both the retention of dye and sugar tolerance. In estimating the value of these tests, we must keep in mind the compensatory changes which occur in the liver whenever a portion of that organ is damaged. An animal may maintain normal hepatic function after the greater part of the liver is excised, and it is therefore probable that in disease, so long as the liver is not completely involved, normal hepatic function is taking place.

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* Read before the Section on Surgery, General and Abdominal, at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] McNee, J. W.: Discussion on Jaundice, Brit. M. J. 2:495-498 (Sept. 20) 1924.

[2] Aschoff, Ludwig: Lectures on Pathology, New York, Paul B. Hoeber, 1924.

[3] Mann, F. C.; Sheard, C. H., and Bollman, J. L.: Studies on the Physiology of the Liver, XI, The Extrahepatic Formation of Bilirubin, Am. J. Physiol., to be published.

All deeply jaundiced patients have dye retention 4 and marked disturbance in sugar tolerance, and yet may be fairly good operative risks without necessarily showing that tendency to ooze and bleed which is so frequently manifested by jaundiced patients postoperatively. Furthermore, these very jaundiced patients are not necessarily those that progress to such a state of hepatic insufficiency as is characterized by the cessation of biliary drainage. The quantitative test for bilirubin in the serum is of the greatest practical value. It indicates not only the degree of jaundice but also the preoperative treatment necessary and the operative risk. The van den Bergh test is a delicate method of detecting and quantitatively measuring small amounts of bilirubin in albuminous fluids, such as the serum. Qualitative differences in the bilirubin in different clinical forms of jaundice may also be detected, so that it is possible to distinguish between hepatic and hemolytic jaundice. The van den Bergh test has taken our attention from the color of the urine, feces and skin, and focused it on what is occurring in the blood. We agree with McNee that it is fully as important to know the quantity of bilirubin in the serum in cases of jaundice as it is to know the amount of urea retained in the blood in cases of renal disease, or of sugar in the blood in cases of diabetes. As a rule, the serum bilirubin test confirms the clinical manifestations and gives the same indication of the patient's condition as the degree and duration of the jaundice do. But there are times when the test and the clinical features do not agree, and it is then that the test justifies itself by postponing operation on patients with latent jaundice until adequate preparation has been made. Since the development of the van den Bergh test, we have also realized that under normal conditions there is a certain amount of bilirubin in the serum in the proportion of about 1 : 500,000 or 1 : 600,000, and furthermore that the proportion of bilirubin to serum will increase to 1 : 50,000 or 1 : 60,000 before any sign of jaundice is shown by the skin. urine or feces.[5] Lying between the point of normal bilirubin and clinical jaundice is the condition known as latent jaundice. And I believe that latent jaundice has more clinical significance than we realize. It is not very uncommon to find a patient who has had a stone with common duct, without icterus, react very much as the jaundiced patient sometimes does, particularly in his tendency to hemorrhage, which is a very much dreaded complication. With this test we have a method of recognizing the presence of latent jaundice before operation, and we can guard the patient against the possible sequelae. We can learn more concerning the condition of the liver by the van den Bergh test than by any of the other known tests.

The condition which we see daily in the operating room when operating for disease of the gallbladder, and which we call hepatitis, is not accompanied by jaundice, and it is therefore likely that, in spite of the apparent changes in the liver in these cases, there is little interference with the reticulo-endothelial cells or the polygonal cells. The condition termed biliary cirrhosis, which is found in all jaundiced patients, is entirely different. The liver in these patients is very firm, large and congested, and often bleeds from mere handling. If the capsule is stripped off or a piece of liver tissue excised, hemorrhage is very free and difficult to control, as the tissues do not hold sutures well. The livers of these patients are characteristic in appearance, which differs from those seen in patients with hemolytic jaundice.

McNee's work is probably the most valuable contribution on the mechanism of jaundice. He finds four circumstances under which icterus may arise: 1. The bile pigment formed in the reticulo-endothelial system passes through the polygonal cells normally to reach the bile capillaries, but is obstructed there and reabsorbed into the blood. 2. The polygonal cells are damaged and the bile pigment carried to them is unable to enter, so the bilirubin passes along the hepatic venous radicles into the general circulation. 3. There has been an excessive destruction of blood cells and too much bilirubin formed for the polygonal cells to deal with. Although some of the bile pigment may pass into the bile capillaries, the excess taken off by the hepatic vein into the general circulation will cause jaundice 4. Besides the damage and disorder function of polygonal cells, there is obstruction in the ducts, such as that caused by cholangeitis.

McNee then classifies jaundice into three clinical groups: obstructive hepatic jaundice, toxic and infectious hepatic jaundice, and hemolytic jaundice.

In studying this explanation of the mechanism of the production of jaundice and the clinical classification with the idea of arriving at some plan of treatment, certain difficult problems present themselves. We can accomplish a great deal in cases of obstructive jaundice by relieving the obstruction, and in the hemolytic cases by removing the spleen, thus taking out a part of the reticulo-endothelial system and preventing so much destruction of blood. But it is difficult to ascertain how much can be accomplished for patients with toxic and infectious hepatic jaundice by treating them surgically.

In a broad clinical sense, we usually think of jaundice in two settings, one in which colicky abdominal pain is the predominating symptom, and the other in which the jaundice is painless. In the first group, stones have usually caused obstruction, while in the second, the lesion is liable to be a malignant disease in the ampulla or pancreas or ducts, or some toxic or infectious condition in the hepatic tissues. The condition that exists in the liver and most of the other tissues in the body in these cases of deep jaundice is sufficient reason for considering the operative risk high.

Operative removal of obstructions, reconstructions, and sometimes anastomoses, are the only procedures that offer any relief, so that the demand for these operations is imperative. Fortunately, we can avail ourselves of certain methods of preoperative preparation that are extremely valuable for jaundiced patients. If the jaundice is subsiding, operation should be postponed as long as the patient shows a tendency to improve. The longer the jaundice has existed, the greater the risk, so that extreme care should be taken in long-standing cases. When the color of the icterus has changed to green, which sometimes becomes almost black, and particularly if there are associated petechial hemorrhages, operations are usually of no avail and should not be performed. These conditions seldom follow obstruction of the ducts by calculi, but are nearly always the result of obstruction by a malignant lesion that is beyond operative removal. No jaundiced patient should be operated on until a very careful investigation has been made into all features of the case. The coagulation time and the calcium time of the blood offer an index to the tendency to hemorrhage, and a great deal has been said about the preparation when that tendency is exaggerated. The value of the administration of calcium before operation cannot be overestimated. It is true that some patients with a slow coagulation time do not bleed, while others with a rapid coagulation time will; but these are the exceptions and indicate that this preoperative treatment should be employed in all instances. The serum bilirubin reflects the situation most accurately, and every effort should be made to reduce this pigment to as nearly normal limits as possible. Besides the administration of calcium, much can be accomplished by a short period of rest, increased fluids, glucose and free elimination. The three-day series of intravenous calcium, as suggested by Vincent, Walters and others, may be repeated several times to advantage in certain cases. By spending from one to two weeks in the preliminary preparation in these cases, it has been possible to obtain more satisfactory results than in previous years, but there is still opportunity for improvement in these rather desperate cases.

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[4] Van den Bergh, A. A. H.: Discussion on Jaundice, Brit. M. J. **2:** 498-500 (Sept. 20) 1924.

[5] Barrow, J. V.; Armstrong, E. L., and Olds, W. H.: A Clinical, Pathological and Operative Study of the Icterus Index, Am. J. M. Sc. **169:** 583-594, 1925.

In the last year, 142 patients with disease of the common duct were operated on in the clinic; 104 of these had some degree of jaundice at the time of the operation. Eleven of the 142 patients died, but in only four was hemorrhage a factor in the death. While four deaths is too many, it is very much better than our former percentage; the improvement indicates that a great deal has been accomplished by preoperative preparation, and that still better results may be obtained. Some of these patients were not good risks because of other conditions, and several of the deaths were attributed at necropsy to cardiac and pulmonary diseases. This would seem to suggest that these operations should be carried out with as little trauma and as little irritation to the respiratory tract as possible.

There are certain technical points in the different operations that are of considerable importance. Most of the operations are for stone in the common duct, and it is very important that every stone should be removed. This is sometimes impossible, as it has been shown at necropsy that occasionally the intrahepatic ducts are lined with calculi. Overlooking a stone in one of the intrahepatic ducts may result seriously.

Ordinarily, the gallbladder should not be excised when the patient is deeply jaundiced. If it contains stones or infection it should be drained; excision may be necessary later. Sometimes it is absolutely necessary to remove the gallbladder at the original operation. The common duct should always be drained after the removal of stones or after opening it for exploration. A Robson drain in the hepatic duct, to be left ten days, usually does very well, but in cases of recurring stone or severe infection, a Deaver T tube, to be left in for weeks, has been satisfactory in my experience. The opening in the duct can be closed around these tubes and no further drain will be necessary. Good free drainage of bile to the outside in these cases means a smooth convalescence. Any tendency for the cessation of biliary drainage is looked on as the beginning of serious trouble.

Unfortunately, it is necessary to operate in a considerable number of cases for postoperative strictures of the common duct. Sometimes it is possible to excise or dilate the stricture and repair the duct; but the most satisfactory results in these cases have been obtained by joining the proximal end of the duct, which is usually dilated, to the duodenum over a rubber tube, which is left to pass out through the intestine. Care should be taken to make a large opening in the duodenum and as accurate an anastomosis as possible, because recurrences of the stricture are not uncommon. This operation is called hepaticoduodenostomy, because, as a matter of fact, the common duct is usually very short, and so in reality the operation is an anastomosis between the liver and the duodenum.

In general, operations for malignant disease in these regions are palliative. A few brilliant cases are recorded in which a carcinoma of the ampulla was removed, and others of resection of the ducts and excision of tumors of the pancreas. I have performed radical operations for carcinoma of the ampulla without very satisfactory results. In most of the cases of painless obstructive jaundice, good results have been obtained by anastomosing the fundus of the gallbladder to the stomach. Some of the patients with supposed malignant disease have remained well, showing that the obstructing lesion was inflammatory. Many of the patients with malignant disease have remained well for a long time. I have performed a cholecystogastrostomy in several cases of infectious hepatic jaundice in which there was bile in the gallbladder, but no evident obstruction, and a number of these patients have seemed to be benefited.

I have wondered whether draining even a small amount of bile into the stomach might have some effect on the jaundice-producing mechanism of the liver. The jaundice has not cleared up completely, but the general condition of the patients has seemed better.

In some of the most deeply jaundiced cases with marked change in the condition of the liver, I have felt that I have accomplished something by needling the tense, congested liver at the same time as I drained the common duct. Even these small, multiple needle punctures of the liver bleed considerably, but they reduce the tension and congestion markedly. In certain cases the needle has passed into one of the ducts, and white bile has escaped from the needle holes. The bleeding from these punctures is severe enough to require a gauze compress, but it is not too much, and it seems to be helpful in the extreme cases.

SUMMARY

A practical application is made of the work of McNee, van den Bergh, Aschoff and Mann to the surgical treatment of jaundiced patients. The most valuable aid in the handling of jaundiced patients is the van den Bergh test for the quantity and quality of bile in the serum.

Much has been accomplished in the preoperative treatment of jaundiced patients, which means more than just the intravenous administration of calcium. I believe that in deeply jaundiced patients the common ducts should usually be drained with a tube, and the gallbladder should be drained if necessary but not removed.

Hepaticoduodenostomy is the procedure of choice in cases of postoperative stricture. Cholecystogastrostomy offers considerable relief in certain types of inoperable malignant diseases, and also seems helpful in cases of hepatic infectious jaundice.

Multiple needle punctures in cases in which the liver is badly damaged allow a certain amount of blood and fluid to drain out, and may tend to restore the function of the liver.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LOBINGIER, MULLER, RAVDIN AND RAVDIN, AND JUDD

DR. JOSHUA E. SWEET, Philadelphia: Dr. Lobingier calls attention to a very fundamental thing in surgery that seems to be forgotten, that infections which get into the blood stream are the dangerous ones. He does not mean that if the stump of the gallbladder is left a new gallbladder will form. I would not want you to go away with too deep an impression concerning the importance of jaundice. You may have gathered from these three papers that jaundice is very important. It is not the jaundice that kills the patient. I want to congratulate the authors on their wanderings into unknown fields. I think we shall find that as soon as the chemists get away from their pursuit of the hydrogen ion into more definite fields we shall get more information concerning the bile salts. Then we shall get still more definite results as to the practical importance of these various tests.

DR. F. T. VAN BEUREN, JR., New York: There is no question that patients with biliary obstruction are desperately ill. In metropolitan hospitals the mortality is very much higher than in hospitals where cases can be selected more carefully and where emergency cases do not demand immediate attention. The improvement in the results has not been remarkable in the last ten years. Ten years ago at one of the large hospitals in New York, the mortality was about 32 per cent. in cases of obstruction of the common bile duct treated surgically. In the last nine years at another large hospital in New York, the mortality has been about 33 per cent., this in spite of every attempt to prepare patients carefully before operation. Whether it is jaundice or infection or the multiple changes that are due to unknown causes that makes these cases such desperate ones, it is hoped that by careful study, such as is now being carried on, the future may have a very much better mortality record. I was interested in Dr. Lobingier's advice to drain more frequently in infections of the gallbladder. The drainage that he institutes through the stump of the gallbladder or cystic duct seems to be an excellent and ingenious one. I looked up the cases at the Presbyterian Hospital in which drainage for biliary obstruction and obstruction of the common duct had been done and found that only 20 per cent. had been drained through the cystic duct; in 4 per cent. an attempt to drain through the cystic duct had been made, but it had not been possible on account of the deformity, and direct drainage through the common duct had to be instituted. If we can get some better means of differentiating cases before operation, it will be of the greatest advantage to know whether complete operation as well as drainage of the common duct should be undertaken at one time, or whether a preliminary operation of drainage of the common duct should be made followed later by removal of the gallbladder. The progress reported by Dr. Judd is most remarkable, and I hope that his results may be equaled in other parts of the country.

DR. B. B. DAVIS, Omaha: A few years ago, when I first heard of the proposition to make functional tests of the liver, it seemed to me rather amazing and almost absurd to try to make tests of the functions of an organ of which we were so ignorant, but I have come to the conclusion from a good deal of study of this subject that as time goes on these tests are going to aid very materially in reaching a better conclusion with regard to some of these patients. So far as diagnosis is concerned, the van den Bergh test is going to be of inestimable assistance. Take, for instance, a gallbladder case in which one has considerable doubt as to the diagnosis. In a case of this type there is no jaundice but a larger percentage of bilirubin in the blood than usual, especially after an attack. Here the test would be an aid in diagnosis, and also when patients have been jaundiced a long time. A falling bilirubin index means that the jaundice is on the point of subsiding. Furthermore, the indirect reaction indicating damage to the hepatic cells will be a good warning as to whether this patient is in condition to stand operation. In the evaluation of a test of this kind, it must be used for some time before we are going to be in position to say anything about it. One thing we have found out is that catarrhal jaundice is not only obstructive but also toxic.

DR. JOHN B. DEAVER, Philadelphia: I believe that Dr. Lobingier's theory is all right, but in my experience it has not worked out that way in practice. What he means is drainage through the stump of the cystic duct. There is a risk of the formation of a new gallbladder or diverticulum which may give as much trouble as the original gallbladder. In my experience, this method is not satisfactory. I have drained in quite a number of cases through the open cystic duct. Furthermore, it is difficult to be sure that one examines the common duct through the cystic duct correctly. My system of examination of the common duct depends a good deal on whether or not I am satisfied to open the duct proper. It is very difficult to get probes into the cystic duct, especially when there is a diseased gallbladder. I have opened the common duct and put in a T tube, as Dr. Judd does. That has been perfectly satisfactory. I am a strong believer in laboratory tests. Very often I do not get much comfort from them, but they all work out in due season without shadow of doubt. My experience with jaundice is that in the cases that are generalized, the results are exceedingly good. In the generalized jaundice cases the ultimate results are bad because in most cases malignancy is present. Fifty per cent. of the patients will live, and the other 50 per cent. will die in three or four months.

DR. D. C. STRAUS, Chicago: Early in 1924 Dr. Friedman of Chicago and I checked over the value of the test for bile in a series of twenty-nine cases proved by operation. These were cases of gallbladder disease, chiefly gallstones, with no visible jaundice. Our idea was to prove in how many of those cases there was latent jaundice. We used the quantitative test of Meulengracht and the van den Bergh test, and clinically we used the Fouchet test as a means of determining the presence of latent jaundice. The Fouchet reagent, when added to bilirubin, changes bilirubin to biliverdin, and that test is specific for bile. Dr. Friedman checked up on a large number of normal persons and found that bilirubin was not present in the blood in sufficient quantity; in other words, the test was negative. The method consists in withdrawing 5 c.c. of blood from a vein. The blood is placed in a centrifugalizing tube and allowed to clot. Before centrifugalizing, from 1 to 3 drops of the serum is placed on a white porcelain dish, an equal amount of Fouchet's reagent is added, and the two are mixed together. If bilirubin is present in abnormal amount, a distinct green appears. That test is not positive in normal persons. Bilirubin must be present in pathologic amount before the green shows. In this series of twenty-nine cases of proved gallbladder disease in which there was no positive jaundice we found in 67 per cent. an abnormal amount of bile; in other words, the test showed green. These were classified as interval cases because there was no pain present. Those patients did have digestive disturbances, such as belching. Pain was present in about 93 per cent. of the patients at the time the test was made. In other conditions, with hemolytic jaundice, the test is positive in 50 per cent. of the cases. In cases of pneumonia without jaundice, the test was positive, so that it does not differentiate between pneumonia and obstructive jaundice, but it shows whether or not there is an abnormal presence of bilirubin in the blood. All we tion that are extremely valuable for jaundiced patients. If the jaundice is subsiding, operation should be postponed as long as the patient shows a tendency to improve. The longer the jaundice has existed, the greater the risk, so that extreme care should be taken in long-standing cases. When the color of the icterus has changed to green, which sometimes becomes almost black, and particularly if there are associated petechial hemorrhages, operations are usually of no avail and should not be performed. These conditions seldom follow obstruction of the ducts by calculi, but are nearly always the result of obstruction by a malignant lesion that is beyond operative removal. No jaundiced patient should be operated on until a very careful investigation has been made into all features of the case. The coagulation time and the calcium time of the blood offer an index to the tendency to hemorrhage, and a great deal has been said about the preparation when that tendency is exaggerated. The value of the administration of calcium before operation cannot be overestimated. It is true that some patients with a slow coagulation time do not bleed, while others with a rapid coagulation time will; but these are the exceptions and indicate that this preoperative treatment should be employed in all instances. The serum bilirubin reflects the situation most accurately, and every effort should be made to reduce this pigment to as nearly normal limits as possible. Besides the administration of calcium, much can be accomplished by a short period of rest, increased fluids, glucose and free elimination. The three-day series of intravenous calcium, as suggested by Vincent, Walters and others, may be repeated several times to advantage in certain cases. By spending from one to two weeks in the preliminary preparation in these cases, it has been possible to obtain more satisfactory results than in previous years, but there is still opportunity for improvement in these rather desperate cases.

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Unfortunately, it is necessary to operate in a considerable number of cases for postoperative strictures of the common duct. Sometimes it is possible to excise or dilate the stricture and repair the duct; but the most satisfactory results in these cases have been obtained by joining the proximal end of the duct, which is usually dilated, to the duodenum over a rubber tube, which is left to pass out through the intestine. Care should be taken to make a large opening in the duodenum and as accurate an anastomosis as possible, because recurrences of the stricture are not uncommon. This operation is called hepaticoduodenostomy, because, as a matter of fact, the common duct is usually very short, and so in reality the operation is an anastomosis between the liver and the duodenum.

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Much has been accomplished in the preoperative treatment of jaundiced patients, which means more than just the intravenous administration of calcium. I believe that in deeply jaundiced patients the common

stark and Cohnheim[8] have definitely proved by animal experiments that connective tissue is not digested without pepsin and hydrochloric acid, and that peptic digestion continues for a considerable length of the intestine.

This remarkable disagreement as to results of simple laboratory procedures which can be readily repeated and checked up is rather disconcerting. There should be no two opinions on the subject any more than whether litmus turns red or blue with acid. The question has not been settled with absolute certainty as yet, though even the defenders of intestinal digestion of connective tissue assert that it takes place only occasionally and under exceptional conditions, the nature of which have not been determined with any degree of exactness.

Clinically, it is fairly generally accepted that connective tissue is digested in the stomach. The latest publications on gastro-enterology adhere to this view. Aaron[9] states that "if connective tissue remnants appear in the feces, there is a disturbance of gastric digestion present." Again,[10] "the connective tissue test is an exceedingly fine one for ascertaining the functional condition existing in the stomach." Gant[11] mentions the presence of connective tissue remnants in the stool as proof of deficient gastric function. White[12] also adheres to this orthodox view. Kuttner[13] considers the presence of connective tissue in the feces as evidence of disturbed gastric function. Faber[14] accepts Schmidt's dictum unequivocally. Boas,[15] in speaking of achylia gastrica, quotes Adolf Schmidt, Knud Faber and himself in support of the statement that connective tissue remains undigested in the absence of pepsin and hydrochloric acid. Le Noir and Agasse-Lafont[16] state that the finding of undigested connective tissue in the feces (according to Schmidt's connective tissue test) is evidence of either insufficient gastric secretion and peptic digestion or too hasty evacuation. Von Noorden,[17] in his latest revision of Adolf Schmidt's book on Intestinal Diseases, lays emphasis on the fact that gastric hypo-acidity or anacidity is responsible for lack of digestion of connective tissue and considers disturbances of peptic digestion as the only cause for appearance of connective tissue in the stool in excessive amounts. Of course, he does not consider the mere finding of connective tissue fibers in the stool as proof of anacidity, but the presence of excessive quantities of connective tissue fibers in the stool should direct our attention to the stomach.

In view of the fact that, in spite of adverse criticism, Schmidt's view is adhered to by the predominating majority of clinicians, Buckstein's assertions deserve careful study. If his conclusion is correct, then we must revise our ideas on the importance of finding undigested connective tissue fibers in the stool.

As stated previously, Buckstein failed to answer Shali's criticism that the catgut, with which he sewed on the tip of the duodenal tube, might have broken off in a mechanical way during the time it remained in the small intestine; also that pepsin and hydrochloric acid might have been present at a considerable distance away from the stomach.

It occurred to me that if the catgut could be protected from any possible chance of being acted on by pepsin and hydrochloric acid and also from any chance of getting detached, then the results could not be questioned any more. Einhorn's method of coating the capsule with fat is not at all reliable, as at any time during the experiment the coating may rub off in some place or become defective in some other manner, with the resultant penetration of the gastric juice into the interior of the capsule. I have definitely found that a pin-point defect in the coating of the capsule is enough to vitiate the results. Another possible flaw in Einhorn's technic is that he does not seem to secure the catgut to the bead sufficiently well to be certain that the disappearance of the catgut is due to its digestion and not to the mechanical loosening of the knot, with the slipping out of the catgut from the bead and its loss in the intestines. The softened and swelled catgut very readily disengages itself from the bead during its long and slippery sojourn along the many feet of the gastro-intestinal tract, unless particular care is taken to secure it to the bead.

METHOD

A good quality of plain catgut was cut in lengths of 7 inches (one-fourth strand) and the ends tied securely to two beads, which were also joined by a piece of silk. By varying the length of the silk thread, either the catgut or the silk was made to hold the two beads together. Thus, when the silk was the shorter, there was no tension or strain put on the catgut. When, on the other hand, the catgut was the shorter, it held the beads together until it either was digested or torn. In this manner the tensile strength of the catgut could be judged, whether or not it is able to withstand the drag and pull of intestinal peristalsis.

The entire thing was then enclosed in a gelatin capsule. Some of the capsules were coated with several layers of keratin and phenyl salicylate. It took at least two coats of each to make the capsules safely enteric; i. e., to protect them from any possibility of gastric digestion. The capsules were very carefully inspected before they were used for the experiments, as a pin-point break in the continuity of the coating was sufficient to allow the solution of the capsule and subsequent digestion of the catgut.

The coated and uncoated capsules were fed to normal persons and to patients with gastro-intestinal disturbances, and the beads with whatever was attached to them recovered from the stools. Three persons with presumably normal digestion were fed both uncoated and coated capsules. Two patients with constipation were given the coated capsules. Three patients with gastric hypermotility were similarly studied. To four patients with anachlorhydria, uncoated capsules were administered.

RESULTS

It was found that the thickest catgut, even chromicized, was just as readily digested as the thinnest.

When the distintegration of the gelatin capsule in the stomach and for some distance in the small intestine was prevented by a proper enteric coating, the catgut was uniformly recovered from the stool unchanged.

A thin coating with phenyl salicylate or keratin is not sufficient to prevent the digestion of the catgut, either because the coating is not perfect and some gastric

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[8] Baumstark, Robert Ueber Bindegewebsverdauung und Magenverdauung im Darme. Verhandl d Cong f inn Med, 1910, p. 368. Baumstark, Robert, and Cohnheim, Otto Ueber Bindegewebsverdauung, Ztschr f physiol chem 65:477, 1910

[9] Aaron, C D · Diseases of the Digestive Organs, Ed 3, Philadelphia, Lea & Febiger, 1921, p 119

[10] Aaron Diseases of the Digestive Organs, p 674

[11] Gant, S G. Diseases of the Rectum, Anus and Colon, Philadelphia, W. B. Saunders Company 1:92, 1923

[12] White, F. W., in Nelson's Loose Leaf Medicine 5:136

[13] Kuttner, Leopold· Spezielle Pathologie und Therapie innerer Krankheiten, Berlin, Urban & Schwarzenberg, Part 1, 6:654, 1923

[14] Faber, Knud· Spezielle Pathologie und Therapie innerer Krankheiten, Berlin, Urban & Schwarzenberg, Part 1, 6:1053.

[15] Boas, I. Diagnostik und Therapie der Magenkrankheiten, Ed 7, Leipzig, George Thieme, 1920, p. 341.

[16] Le Noir and Agasse Lafont: Noveau traité de médecine 13:414.

[17] Von Noorden, C.: Adolf Schmidt's Klinik der Darmkrankheiten, Ed. 2, Muenchen, J F. Bergmann, 1921, pp 52, 126 and 269.

5. Therapeutic injections gave little apparent relief.
6. One advanced case showed no improvement with 40 c.c. of unconcentrated serum, and there was a serious serum disease.

INFECTION OF THE TONSILLOGLOTTIC REGION ASSOCIATED WITH CERVICAL CELLULITIS

TEN CASES WITH FOUR DEATHS *

VIRGINIUS DABNEY, M.D.
WASHINGTON, D. C.

While several of the cases here reported might well be called Ludwig's angina, I have purposely avoided the term, partly because it is somewhat controversial, but especially because the affection is not an angina and Ludwig was not by fifty years the first to describe accurately the infection. In 1786, Kirkland[1] reported a case of phlegmonous infection of the floor of the mouth and deep cervical region which had all the classical symptoms of the so-called Ludwig's angina. Similarly, Wells,[2] in 1809, twenty-seven years before Ludwig's report, gave a graphic account of a case Moreover, Jacques[3] states categorically that Gensoul of Lyons ten years before Ludwig made a very full report of such cases. Ludwig's name is identified with this type of deep cervical abscess largely because of the minute and exhaustive details of his reports, together with the fact that his observations were based on what appeared to be an epidemic of the disease, during which one of the royal family succumbed to it.[4] These circumstances served to focus attention on his contribution to the literature at the time.

The abundant vascular and lymphatic supply of the neck, its narrow confines containing so many important structures, and its very loose connective tissue leading direct to the mediastinum all constitute a field inviting the spread of infection when once established here. Dangerous narrowing of the chink of the glottis, normally none too wide, by the inevitable edema of this region is a serious aspect of cellulitis and one that should never be lost to mind by one in attendance on this type of infection. Relatively speaking, infections about the mouth are seldom associated with cellulitis, though mild adenitis of the various salivary glands is not rare. For some unaccountable reason, swelling of the column of the neck is viewed by many medical men with complacence, whether or not associated with frank oral infection, whereas it is really often an early and valuable sign of a serious and even fatal disorder. The cause may be obscure, but the condition is none the less worthy of the greatest consideration. I may be a medical pessimist, but I feel profoundly disturbed when I see a case of oropharyngeal infection complicated by a cellulitis of the neck, especially when edema of the glottis is present, as it always is sooner or later. My feeling is due, perhaps, to the unfortunate circumstance that I seldom see them early enough for the fatal consequences to be aborted, most of them coming to me in consultation when the process is far advanced.

I feel confident that there are frequently early symptoms whose recognition would have served to prevent death by suggesting preventive treatment. Such cases are those beginning with a deep-seated peritonsillar abscess, an improperly extracted carious tooth,[5] or the stirring into activity of a latent chronic follicular tonsil infection; in fact, I have seen a cellulitis and the whole train of symptoms precipitated by every one of these causes. When the pus of a peritonsillar abscess is not evacuated after several careful attempts, the danger of the infection penetrating deeply along the planes of fascia and even into the mediastinum is real and ever present, and delay waiting for it to break through one of the old incisions is a serious responsibility and a grave error of surgical judgment. I myself, after a wait of two or three days, have not hesitated to remove the tonsil in order to provide adequate drainage, which at times has required probing below the capsule to secure this end. This procedure needs no defense other than the statement that it is done to save life when death is imminent, and the chief objection to its employment is one of tradition and precedent, to which most of us in the medical profession are slaves. The danger of removing an acutely inflamed tonsil is much less than allowing the pus about it to gravitate into the deep cervical planes or mediastinum, or cause a septicemia ending in a dilatation of the heart. This last event I have seen three times in consultation, and I am moderately certain that an early operation such as I have described would have prevented death in all three cases.

It is well known that the streptococcus can lodge in the glottis without pausing to establish lodgement higher up in the respiratory tract, and may show no evidence of its presence before the appearance of edema of the glottis and cervical cellulitis.

Case 1.—Mrs. R., a heretofore apparently healthy woman, aged 45, was seen by me in consultation at noon, at which time there was a collar of induration at the level of the thyroid. There was nothing inflammatory in the nose or throat; the tonsils were mere atrophied remains, and the teeth seemingly perfectly healthy. A week before this, the patient had had what was supposed to be a slight influenza, from which she seemed to recover in four or five days. The cellulitis and embarrassed breathing had existed only a few hours, and the stridor was found to be due to edema of the base of the tongue and one arytenoid. Her respiration was becoming increasingly difficult and her pulse intermittent, so a rapid tracheotomy was done and the relief of the difficult breathing was immediate. However, the heart action rapidly grew worse, and she soon became unconscious and died in twelve hours after the appearance of the cellulitis. The manner of her death was rather typical of these cases: cardiac dilatation and sudden onset, associated with cellulitis and edema of the larynx.

Case 2.—Mrs. A., aged 50, presented a condition almost identical with that of Patient 1, the only difference being the presence of dyspnea and aphonia. There was edema of the whole glottis, and cellulitis extending from the lower edge of the jaw to within an inch of the clavicle. Regarding her as being on the point of dying, I rejected suggestions of iced epinephrin and intubation as being totally inadequate and mere temporizing. My urgent recommendation of tracheotomy was not accepted, but would probably not have helped anyway. She died from cardiac dilatation five hours later, having been unconscious for two hours before death.

Case 3.—Mrs. J. had been critically ill with massive pneumonia for six days. I was called in consultation to explain sudden swelling of the nose, obstruction of nasal breathing and loss of voice. She proved to have facial erysipelas and edema of the glottis, with cellulitis of one side of the neck. Nothing could be done here, of course, other than ice exter-

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Kirkland: Inquiry Into the Present State of Medical Surgery, London **2**: 158, 1786.

[2] Wells: Tr. Soc. Improvement of Medical and Chirurgical Knowledge **3**: 360, 1809.

[3] Jacques: Ann. d. mal. de l'oreille et du larynx **35**: No. 10, 1909.

[4] Atzrott, G.: Zwei Falle von Angina Ludwigii, Berlin, Feb. 16, 1912 (a full treatise).

[5] Guerini, V.: Dental Brief **2**: 28, 1906.

nally and steam inhalation. Death was inevitable, and she lived only two days longer. The full blown erysipelas in this case is very interesting, as these cases are all of an erysipelas nature, the course, infecting organism and progress being characteristic of this disease. Here, of course, the source of the streptococcus was the lung, the secretions from this part being rich in streptococci.

Case 4.—B. B., aged 38, colored, a children's nurse, presented an illustration again of the ability of the streptococcus to strike low down in the throat without any apparent previous residence above, as all carious teeth and the tonsils had been removed two years before. However, this patient had been living in a house that had been visited by a scourge of the hemolytic streptococcus and certainly picked up her infection from nursing one of the children, who had a fulminating infection of the ethmoid. This particular case has been reported before.[6] With a prodrome of malaise and hoarseness, the patient came down with a malignant infection of the glottis, associated with such extensive edema of the epiglottis as to prevent inspection below that region. Cellulitis was marked from the first and was very extensive. The temperature touched 104 F., but routine treatment in twenty-four hours reduced the edema and discomfort markedly. The temperature dropped to 100 F. in thirty-six hours. However, at 4 o'clock in the morning of the third day I was called with the report that she was having great difficulty in breathing. As her heart action seemed fairly good, the dyspnea was attributed to tracheal pressure, and a tracheotomy seemed to afford relief to the respiratory embarrassment. However, she soon became unconscious and died in five hours from acute dilatation of the heart, which showed fatty degeneration.

This concludes the series of fatal cases, in none of which could death have been averted after the time at which I saw the patients. There follow seven cases in which death was certainly imminent, but was prevented, in my opinion, by the measures adopted for relief of the basic condition.

Case 5.—Miss G., a healthy girl, aged 20 years, had had recurrent sore throat. There was a peritonsillar abscess when I first saw her. The temperature was 100.2 F. and the usual symptoms were present, but edema of the soft palate was especially marked. The jaws opened readily. Incision at the usual place released no pus, nor did careful and deep probing. The other tonsil showed follicular disease, but no acute inflammation. A gauze wick was inserted, ice was applied externally, and a hot gargle was given. Reopening and probing did no good the next day. Cellulitis was seen on the third day. This had increased on the fourth day and fixation of the jaws was found. The temperature was 101.2 F.; swallowing was difficult owing to a swelling below the tongue. As the condition was deemed serious, the patient was taken to the hospital and etherized. The tonsil was removed. A grooved director driven beneath the tonsil capsule in the middle third released pus in considerable amount. A gauze drain was inserted. While the patient was under the anesthetic, I was able to see that the edema had invaded the false cords and the epiglottis. Her temperature rose rapidly that night to 102.2 F., but later fell and pursued a mildly septic course for three days. The boardlike hardness of the neck was a week in disappearing, and the laryngeal edema also. I believe that nothing but a tonsillectomy could have saved this patient, in that it opened the exit for the pus, which was gradually making its way toward the mediastinum and had already caused incipient septicemia.

Case 6.—Mrs. S., an undernourished woman, aged 55, had had repeated laryngitis and loss of the voice in the past five years, with occasional sore throat. No inflammation was seen about the oropharynx, but there was beginning edema of the epiglottis and cellulitis. Aphonia, slight dyspnea and cough were present. Routine treatment did not prevent the spread of the edema to the arytenoids for the next six hours, but purgation and continued treatment seemed in the next twelve hours to arrest the process. The cause of this condition was apparently deeply buried and infected tonsils.

Case 7.—A sensible, married woman, aged 45, had had several attacks of quinsy. From past experience she had made her own diagnosis, but this time had some difficulty in breathing that rather alarmed her. This was found to be due to edema of the base of the tongue and pressure on the trachea by the brawny swelling in the submaxillary region. While the swelling was easily made out above the tonsil, incision there gave vent to practically no pus; however, routine treatment caused relief from the respiratory trouble in twenty-four hours, though painful deglutition and otalgia persisted for two days. The source of the infection was, of course, the tonsils.

Case 8.—Mrs. E., aged 38, had had the tonsils removed eight years before, a small piece remaining in each supratonsillar region, which had caused a peritonsillar abscess several times. She refused removal, but accepted the advice of a dentist and had radium applied four times. The tonsil remains were much diminished thereby, but sealed off by fibrous bands a blind abscess, which was thus forced into the circulation. A multiple arthritis developed and myocarditis. At this stage she returned to me, too late, of course, to prevent the heart damage, with cervical cellulitis, pain in all the great joints and a heart that was incapable of withstanding so little strain as that necessitated by climbing stairs. While removal was a desperate chance, I felt that it might prevent an extension of the infectious process, but it proved to be one of the most formidable procedures that I had ever attempted, owing to the dense fibrous bands caused by the radium, and obliteration of all the normal planes of cleavage. The local condition was much improved and the heart condition has not advanced, but she will be an invalid for the rest of her life, entirely as the result, in my opinion, of the injudicious use of radium instead of removal of the diseased tissue in toto. She will die ultimately from a dilatation, in all probability, as she has apparently escaped any vegetative disease of the heart valves.

Case 9.—Dr. T., who had had recurrent tonsillitis, was seen by me in consultation with a bilateral peritonsillar abscess of three days' standing which had been incised several times without any relief. At this time there was definite bilateral cellulitis, and fixation of the jaws preventing any inspection of the throat, stridor, and a temperature of 101 F. Under ether one side was deeply incised, and after probing a gush of yellow pus followed; at this moment the patient ceased to breathe, and the attending physician handed me a scalpel with which to do an emergency tracheotomy. However, believing it to be a respiratory spasm, I persisted in artificial respiration and then proceeded to open the other side, which yielded even more pus. A wick was put in place and routine treatment instituted. In twelve hours all pain ceased, but it required four days for the laryngeal edema to disappear; in fact, it was really a week before the larynx was normal.

Case 10.—Mrs. J., who had never been sick in her life before, seen in consultation, had had an attack of frontomaxillary infection two months before, treated with autogenous vaccine (pneumococcus). Four days before I saw her she had been treated for a mild sore throat by wiping out the crypts with 2 per cent. mercurochrome-220 soluble, and the next day came down with a severe laryngitis and painful deglutition. The second day the neck swelled and there appeared a swelling beneath the tongue, far forward. I suggested the routine treatment as outlined in these cases, but the process was hardly affected at all, and the pain in the neck became intolerable. The cellulitis had now become bilateral and of extraordinary hardness. The temperature was 99.2 F. The third day an edematous spot was made out in the lower part of the cellulitis area which gave pus on deep incision (streptococcus). The edema of the glottic region began the first day I saw her and took the form of a soft, pedunculated, horizontal mass of edematous tissue occupying the space between the base of the tongue and the epiglottis. The fourth day it extended to the left arytenoid and, fortunately, made no further advance, though it clung there for five days without any sign of diminution. In fact, the persistence of this condition kept us from feeling safe till it began to leave. The swelling beneath the tongue, the classical symptom of Ludwig's angina, was the last local sign to abate, being a week after the incision of the abscess. Without doubt, the treatment of the tonsil, while perfectly legitimate, was the cause of the whole trouble. A latent tonsillar infection often flares up into malignant activity when so disturbed. I have since removed the tonsils in this case and found them thoroughly diseased and streaked with fibrous tissue, a proof of their having been the site of frequent inflammatory disease.

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[6] Dabney, Virginius: A Scourge of the Hemolytic Streptococcus, M. J. & Rec. **119**: 587 (June 18) 1924 ("Second Epidemic," Case 11).

COMMENT

The lesson I have learned from these cases, and which I believe justifies this report, is that a swelling of the neck associated with a respiratory infection is probably a grave disorder and is to be treated with vigilant and immediate care. The cause is generally to be found if careful search is made, and its removal is generally possible, which, if done early, will reduce a mortality from about 75 per cent. to about 2 per cent. I am a firm believer in these cases of the external application of ice and the inhalation of steam impregnated with some medicament such as the compound tincture of benzoin, saline purgation and the use of morphin for rest. The last is not the least; it is most important. All my own cases are so treated and it is what I mean by "routine treatment."

Cellulitis of the neck is Nature's urgent warning that the barriers against respiratory infection have broken down and constitute a cry for assistance which every thoughtful, observant attendant will heed with immediate respect and thorough treatment. It must not be forgotten that dental caries has often caused authentic cases of Ludwig's angina, and extraction of such teeth has resulted in resolution of the septic process. In fact, Ludwig reports such cases himself, without any other treatment. In only one of these cases did the medical attendant notice or attach any importance to the cellulitis, and my prognosis of death stamped me in two of the fatal cases as an alarmist.

CONCLUSION

The erysipelas-like behavior of these cases is striking, as well as the fact, in my own cases at least, that the streptococcus was causative. Moreover, in scrutinizing this element in all the literature that I personally examined, this organism appeared always to be present, whether causative or not. All my cases showed albuminuria and edema of the glottic region and, later or earlier, cellulitis. So far as could be determined, the edema was not due to any cardiac or renal disease, primarily, in any of these cases, nor was hysteria an element in any of them. The invariable presence of edema of the glottis or base of the tongue, easily understood from the proximity of the infection, and the obstruction of the circulation from pressure in a narrow, confined zone, is worth recording in order to emphasize one of the several elements of danger in this disease. Moreover, the slowness of subsidence of the edema and the still greater slowness of the cellulitis and denitis to disappear are, again, noteworthy characteristics. Incision through the neck into the cervical abscess when this exists is, of course, entirely justifiable. Unfortunately, however, when the necessity for this becomes apparent either the patient is too septic or the myocarditis too far advanced to permit a successful issue by operation. As has been shown in the fatal cases nearly all the deaths result from cardiac dilatation.

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THE POSSIBLE MEANS OF PREVENTING DEEP CERVICAL ABSCESS

FOLLOWING THE REMOVAL OF TONSILS UNDER LOCAL ANESTHESIA *

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This is not intended to be a discussion of the technic of tonsillectomy. Any method which has for its object the complete removal of the tonsils and which accomplishes this object without the removal of other than tonsillar tissue, and with the minimum amount of trauma, may be said to be satisfactory. Just as the question of method can be said to be settled, so the question as to whether the tonsils shall be removed under local or general anesthesia can be said to be settled everywhere, except in Boston. We may then regard the advisability of the removal of the tonsils under local anesthesia, in certain selected cases, as an accepted fact.

Among complications or sequelae of the removal of the tonsils, whether under local or general anesthesia, may be mentioned, first of all, lung abscess and, secondly, deep cervical abscess. While the latter is less serious than the former, it is certainly a complication to be avoided if possible. The occurrence of two cases of deep cervical abscess, in a fairly large series of cases, following operations under local anesthesia, whereas there were no such misfortunes in an even larger series under general anesthesia, naturally raised the question whether there might be something peculiar to the one method and not used in the other which might be responsible. Suspicion pointed to the method of injection of the procain solution and the possibility of carrying infection by means of such injection from the tonsil itself into the deeper structures surrounding the capsule. A method was accordingly devised by which the possibility of the needle's transfixing any tonsillar tissue during the infiltration could be definitely excluded. Since this method was introduced there have been no cases of deep cervical abscess, either in my own experience or in that of my associates in our clinic at Lakeside Hospital.

The method of producing local anesthesia will accordingly be given in considerable detail, on the supposition that a faulty method for the production of this anesthesia is responsible for these unfortunate cases.

A preliminary dose of morphin, or codein is administered one hour before the operation. In many cases this may not be necessary. Certainly, however, in nervous patients it acts as a sedative and nervous depressant and decreases the apprehension with which many patients enter the operating room.

Before the infiltration of the procain solution, the tonsils and pillars, as well as the soft palate and pharyngeal wall, are painted lightly with a saturated solution of cocain in epinephrin. This produces an anemia to a greater or less degree, together with a superficial anesthesia. Above all, it abolishes the reflexes in most cases. It is well to wait one or two minutes following the last application of cocain before the infiltration is begun.

This infiltration is accomplished by means of a 2 c.c. record syringe, with a straight needle and the familiar 0.5 per cent. procain solution, to the dram of which 1 minim (0.06 c.c.) of epinephrin has been added. The infiltration anesthesia may be divided into the superficial

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and deep stages, though there is some question whether the superficial anesthesia is absolutely necessary. In producing the superficial anesthesia, the needle is introduced in three places around each tonsil, care being taken to see that it is introduced only so far that the eye is buried beneath the surface. If the injection is too shallow or the eye of the needle is only partly buried, the fluid will return into the patient's mouth; if too deep, it will be seen to emerge from behind the pillar or even from the tonsil itself; while if in the proper position there will occur an edema or ballooning of the pillar, similar to that following the injection of procain into the skin. The three points for the superficial injections are the anterior pillar, just external to the margin and immediately above and below the middle third of the tonsil. The third injection is made into the posterior pillar immediately behind the upper pole of the tonsil. In the foregoing procedures it will be seen that the tonsillar tissue has in no case been entered or encroached on by the point of the needle.

Superficial anesthesia is almost immediately complete, and the deep anesthesia may be begun. The patient depresses his own tongue with the tongue depressor. This has the double advantage of eliminating an assistant and, in addition, serves in part to divert the patient's attention from the operation, in that it gives him something definite to do. In other words, the patient acts as first assistant at his own operation. The tonsil is now siezed by Tydings or any other suitable forceps, and drawn firmly but gently inward and forward. As a result a sulcus, often of considerable depth, will be developed immediately external to the tonsil. This sulcus indicates definitely the outer limit of the tonsil and is the only method which, in my experience, will show absolutely how far the tonsil extends. Often considerable surprise will be experienced, for a tonsil that appears small will be found to extend deeply into the tonsillar fossa, while an apparently large tonsil will lie quite superficially. The needle is now introduced to a depth of 1 or 2 cm., when on entering the loose areolar tissue the sensation of entering a dead space will be experienced.

Deep infiltration is made in two places, well toward the lower pole and again at a point about opposite the middle of the tonsil. From 1 to 2 c.c. of solution is injected at each point. Anesthesia, as well as anemia, is complete in one or two minutes, and a painless, and often times bloodless, operation may now be performed.

CONCLUSIONS

1. The occurrence of deep cervical abscess following operations under local rather than under general anesthesia would point to the method of producing the anesthesia as being the probable cause.
2. Although susceptible of no definite proof, the transfixing of tonsillar tissue by the needle and the consequent transmitting of infectious material into the deep structures of the neck seems the most likely cause of deep cervical abscess.
3. Since the adoption of the method described, no cases of deep cervical abscess have occurred.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. DABNEY AND CHAMBERLIN

DR. OTTO GLOGAU, New York: Dr. Dabney correctly called attention to the danger of this infection that starts in the nose and throat and descends into the neck and mediastinum. Too many are given up, and death is caused by septicemia and mediastinitis. As long as there is a breath of life, the external method described by me may save the patient. By a large incision in front of the sternocleidomastoid, the vascular sheath is exposed; and from this route the pus may be reached at any level of the retropharyngeal, retrolaryngeal and retro-esophageal space into which it descended, and the mediastinum may be drained if infected or sealed for protection. A few weeks ago I operated on a critically ill patient whose tonsils had been removed under local anesthesia. Secondary infection with descending abscess and phlegmon of the neck followed. A general surgeon had incised behind the sternocleidomastoid without relief. I exposed the vascular sheath in front of the muscle and, introducing and spreading forceps beneath the digastric tendon into the direction of the peritonsillar space, evacuated a large quantity of pus. Tonsillectomy to probe for the pus is a dangerous procedure. One who saw the jugular vein extended often to the size of a bulb would be afraid to work in the dark. Instead of waiting two or three days before the tonsils are removed, one should rather resort immediately to the external operation and prevent mediastinitis. As to Dr. Chamberlin's paper, any improvement in our methods is welcome. However, infiltration round the tonsils loosens the tissues and prepares for the millions of germs always present in this neighborhood the possibility of forming an abscess. I prefer general anesthesia. Swelling of the neck, secondary to an infection of the nose and throat, is always a dangerous signal. We should not waste any time in waiting but resort immediately to the life-saving external operation. But even in cases considered to be beyond help the patient should be given a possible chance by resorting to this logical way of reaching and draining the pus. The operation should be performed only by an experienced otolaryngologist who masters the anatomy and pathology of this region. This gospel should be spread among general practitioners and general surgeons.

DR. GEORGE F. KEIPER, Lafayette, Ind.: In the study of abscesses of the neck, it is wise for us to understand something of the embryology and anatomy of the mediastinum, and this is a very nice way to visualize it. Embryologically, the heart and other organs originate in the neck and are projected into the chest. We will consider this representing the membrane enclosing the organs as they are projected into the chest. Not all anatomists agree that the lungs are a part of the mediastinum. The mediastinum extends from the base of the skull into the thorax itself, and any abscess of the neck on that account is really a mediastinal abscess and is potent for a great deal of harm not only in the neck but also within the thorax. Dr. Glogau brought out the technic of Marschig. It was hard for one to find the anterior border of the sternocleidomastoid because of the intense swelling in the neck. The incision must be placed well forward and made from the tip of the mastoid to the sternum. We proceed below and find the vascular sheath, and then we lay aside all knives and put in a piece of sterile gauze. That walls off the anterior column of the mediastinum. It is the only thing to do. Next we find the omohyoid muscle, which we cut, and we go inward and if necessary wall it off with sterile gauze. This is the posterior column of the mediastinum. Then with the finger we go to the vertebral column, and very often the abscess will be found there and can be evacuated. If I read Marschig aright, he depends on gauze drainage. In this I would utter a warning. When there is cervical abscess it is much better to use a large rubber tube. Then we shall be sure we have drainage. In the diagnosis of these cases a large esophageal speculum of Jackson is a very good thing to locate the abscess. With reference to Dr. Chamberlin's paper, I have had practically no experience with this method, but I can see that if we consider the anatomy of the neck in the region of the tonsil, what we are doing with an injection is practically to wall off this peritonsillar space from all the structures beneath. In other words, by so doing we prevent anything from going down in the mediastinum itself. It is apparently a very valuable procedure and will no doubt stand us well in hand in preventing abscess of the neck following our tonsillectomies.

DR. ABRAHAM ZINGHER, New York: I should like to draw attention to diphtheria as a secondary complication following tonsillectomy. It is especially dangerous, as the membrane appearing at the site of the tonsillar fossae after removal of the tonsils resembles so closely a diphtheritic membrane. The disease diphtheria is likely to be overlooked until it is too late. One such case came to my attention recently. The child had been operated on seven days previously and the tonsils had been removed. Examination of the fauces showed a membrane spreading over both tonsillar fossae, over the pillars, soft palate and the entire posterior pharyngeal wall. I gave the patient 10,000 units of antitoxin without waiting for the results of the throat culture, which subsequently proved positive and virulent. Five weeks later the child developed a palatal paralysis, from which he recovered. A delay of twenty-four hours before injecting the antitoxin in the patient would have probably had serious consequences. There were two fatal cases in the Willard Parker Hospital during the last two years, children who had been operated on in other hospitals by tonsillectomy and in whom diphtheria developed. The condition was not recognized in time for a sufficiently prompt administration of antitoxin to save the children's lives. It is strongly advisable, therefore, to take, as a routine, nose and throat cultures from patients in whom these structures are to be operated on, and if the cultures are positive for virulent diphtheria bacilli to inject a prophylactic dose of 1,500 units of diphtheria antitoxin. This is necessary unless the patients have been previously tested with the Schick test and show a negative reaction, or have been immunized successfully with toxin-antitoxin and give a negative Schick retest. This simple precaution may avoid a catastrophe in one's practice and save one's reputation in one's own community.

Dr. Leon E. White, Boston: I suppose the reason we do not use more local anesthesia in Boston is that one of our prominent men lost one of his confrères some years ago following a local anesthesia. We have been rather timid about using it since. We feel that we have some ground for our method. Whenever one injects anything capable of producing serious disturbance of the heart and possibly death, it is in the system and one cannot get it out. For that reason we use ether. A personal experience may not be amiss. I removed the tonsils from a man with some cardiac disease and everything went very nicely. I thought that if I could do that well I could use local anesthesia thereafter. Shortly after I had a woman from whom I removed tonsils under local anesthesia, and she almost bled to death; I had to take her to the hospital and ligate the vessels. I feel that I would prefer to do what is necessary while the patient is under the anesthetic. Of course, we do not get these abscesses because we do not inject anything to produce them.

Dr. C. F. Yerger, Chicago: In looking over the statistics of the Cook County Hospital, I found that during the last ten years sixty cases had been classified as Ludwig's angina; in analyzing these cases I found that only twenty of them could be considered as bona fide cases of Ludwig's angina. Most of the cases thus excluded were cervical cellulitis, abscess, or adenitis and osteoperiostitis of the jaw. We should be more circumspect in making a diagnosis of Ludwig's angina. In the latter, we should observe primarily an induration in the submaxillary region of the neck or a submaxillary cellulitis, and, secondly, a sublingual cellulitis which causes the floor of the mouth and the tongue to be pushed upward and is associated with a trismus. In pharyngeal phlegmon, as that associated with retropharyngeal or peritonsillar abscess, we may have involvement of the laryngeal region by extension downward, and trismus may be present as a result of the involvement of the muscles of the floor of the mouth, but submaxillary induration of the neck is absent. Therefore these cases should not be classified as Ludwig's angina. I wish to emphasize the necessity of using only local anesthesia in operations for Ludwig's angina; we should never administer a general anesthetic to a patient that is dyspneic; this should be one of the golden rules of laryngology. We do not know the exact pathology of Ludwig's angina. In 1836, Ludwig stated that the pathology was that of a gangrenous induration of the neck. Since Ludwig's day our knowledge of the pathology of this condition has not advanced very much, nor will it until we follow the fatal cases to the necropsy room and acquire more precise pathologic data. The cause of death in these cases is another question that is not settled and needs elucidation. Dr. Dabney stated that in his cases it was due to cardiac dilatation. We have observed that in most of the cases in the hospital, the cause of death was edema of the larynx, bronchial pneumonia, or mediastinitis.

Dr. W. W. Carter, New York: The discussion of this subject has been so comprehensive that I will just call attention to one or two practical points that I have found of value in the course of my experience. Dr. Keiper has very graphically called our attention to the manner in which the tissues go down into the mediastinum. That is a point that every man dealing with this subject should remember because there is a tendency for the pus to gravitate into the mediastinum. For that reason I want to call attention to the fact that postural treatment (head and shoulders lowered) in these cases is of great importance. The cases that have been handled successfully have been those in which the head has been kept lowered as much as possible. I think also that this is anticipating abscess of the mediastinum before the abscess really has occurred. I think Dr. Glogau's point of making an incision on the outside should be followed in many cases, but I do not agree with him that the incision should be made at the side of the larynx alone. It should be made also at the base of the tongue in order to diminish the edema of the glottis, because nearly all of these patients have edema of the glottis and in some cases tracheotomy is absolutely necessary. In three of the cases I have had in the past two years, tracheotomy had to be done. Another thing is heat. I consider this agent of great value and prefer it to cold, as recommended by Dr. Dabney. I believe we do not realize the great advantage of heat in treatment of infections of this kind. I prefer tube drainage, as gauze quickly becomes clogged with pus and does not serve the purpose. I use in these cases a strong solution of potassium permanganate.

Dr. Sidney Israel, Houston, Texas: With reference to Dr. Dabney's view and the procedure he advocates in regard to infected tonsils, I cannot subscribe to the surgical judgment that would advocate the removing of a tonsil in the presence of an acute inflammation, whether abscess is present or not. I cannot feel that this is the wise course to pursue, and think that if this impression should get out it would be extremely dangerous from the standpoint of the patient. I feel as the general surgeons do regarding a suppurative condition of the appendix. No surgeon with sound judgment would attempt to manipulate the bowel and break away the protective area which Nature has provided in the presence of a suppurative appendix; he generally drains freely and allows Nature to take care of it, and on a later date removes the appendix. The same attitude should be taken in regard to the tonsils. With reference to Dr. Chamberlin's technic, I have employed that method of producing a sulcus outside the tonsil for the last two years. I have no infection, and accomplish the same procedure by using, instead of forceps, a corkscrew holder, making traction, but not squeezing the tonsil, so as not to distribute infection into the blood stream by squeezing or with the syringe. Knowledge of the anatomy of the tonsil is important. I am not yet convinced that it is the local anesthesia that produces postoperative abscesses or cellulitis. We can well understand that the presence of an infected or contaminated needle or solution would be liable to bring about infection. In our experience we have never had abscess following tonsillectomy. I believe that the type of operation probably has considerable influence in the infection taking place after operation. By the type of operation, I mean, regardless of the instrument employed, the amount of muscle tissue removed, and the amount of injury in the area outside of the tonsil. Certainly the more muscle tissue removed and the more trauma, the more liability to infection. The toilet of the operated field is important. We use mercurochrome-220 soluble before the tonsil is injected, and either mercurochrome or some other antiseptic after the tonsil is removed. That Dr. Charberlin did not note any abscesses in patients that were operated on under general anesthesia might be due to the fact that epinephrin was not used as in the cases wherein local anesthesia was employed, and the free bleeding customary in patients operated on under general anesthesia was not present to minimize infection.

Dr. Charles W. Richardson, Washington, D. C.: This has been a most fruitful discussion of two very important conditions, but there is one type of infection in this region, most disastrous in its character, which has not even been mentioned. It results almost entirely from injury or trauma in connection with the extraction of teeth, and is the gas bacillus or the infection by the bacillus of Welch in these tissues. I do not know that many have seen this. I have seen two cases and they present many of the evidences of Ludwig's angina, except that there is a peculiar feeling in the affected area of the neck, as far as the inflammation extends, of crackling due to the gas in the tissue. If the tooth cavity is well opened, culture smears will yield the bacillus. Usually these cases are rapidly fatal, and it is rarely except at postmortem that one is able to obtain a positive diagnosis from culture or from smear. It is usually very fulminating in character, and it is only from the culture of the tissue extracted or from the peculiar feeling of the tissue that one can make the diagnosis.

Dr. Oscar Wilkinson, Washington, D. C.: I wish to congratulate Dr. Chamberlin on his excellent operation which he has described, an operation which I described practically identical in every detail, two years ago, and of which I will be very glad to send him a reprint. The only difference is that I made three injections exterior to the tonsil instead of two. With reference to the prevention of abscess in the neck, I think it is important to prepare our patients and to select them. I never touch a tonsil if there is an acute infection in the throat, and I never take a tonsil out until three weeks after an acute tonsillitis. I think that if these rules were followed we would avoid a good many of our postoperative unpleasant effects. Dr. Israel mentioned the fact that the fluid injected should certainly be sterile; that is good. He also mentioned unnecessary trauma. I believe that unnecessary trauma at the time of operation has more to do with it than the local anesthesia; also the immediate after-care of the patient. We invariably paint the pillars of the tonsil beforehand with compound solution of iodin, and when I am through I paint the cavity with 50 per cent. compound solution of iodin.

Dr. Virginius Dabney, Washington, D. C.: Dr. Glogau's impassioned indictment of me seems based on his belief that my paper was on Ludwig's angina, whereas the title itself shows otherwise. I thought I had made it especially plain by my references to Ludwig. However, if I failed I must accept responsibility. In speaking vehemently of his operation for draining a deep cervical abscess of the neck, he denounces me for conservatism; whereas, my paper was not concerned with cutting down on free pus. When he says that he would cut down on a neck which had showed nothing else but swelling for so short a time as two hours, my opinion of the procedure is the same as that which he holds for my procedure. As for removing a tonsil under the conditions described, I stand by my original statement.

Dr William B. Chamberlin, Cleveland: The accident to which Dr White alluded I am familiar with. Accidents occur of course after either local or general anesthesia. I think it is unfortunate that this accident should have occurred in the early experience with local anesthesia. If we look up the records we will probably find that quite as many, if not more, accidents have occurred with the use of general anesthesia. There will be bleeding after a local, as well as after a general, anesthesia, and it is no more difficult to control. Dr. Keiper brought out an interesting point which I had not thought of, and that is the probable protecting influence of the injection into the peritonsillar tissue. Dr. Israel spoke of forceps. Of course it makes no difference what type of forceps one uses. It is axiomatic, however, that trauma should be reduced to a minimum. This point I mentioned in my paper. I apologize to Dr. Wilkinson for failing to give credit to him. I wish to assure him, however, that we are accustomed to the use of sterile solutions in our cli

ALTERNATING CONVERGENT SQUINT

REPORT OF TWO CASES WITH ACQUIRED STEREOSCOPIC VISION AFTER OPERATION *

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The literature contains very little concerning the management of this type of strabismus. There is little unanimity of opinion among ophthalmologists concerning the best way to treat alternating squint, although it is a question we are often called on to decide. The discussion here is limited to that type of case in which the vision is normal and equal in the two eyes, or practically so, and in which the patient fixes with either eye at will while the other eye converges.

Worth divides this kind of squint into two classes, accidental alternating and essential alternating. In the former the refractive error is equal in the two eyes, and the squint, if untreated, tends to become unilateral. In the latter there is little or no refractive error, and the visual acuity in each eye is perfect. These two classes comprise about 15 per cent. of the cases, according to Worth's statistics. My office records show that I have examined eighty cases of comitant convergent squint in the last four years. Sixty-four of these were monocular and sixteen (20 per cent.) were alternating. Of the alternating cases, three were classed as essential (3.75 per cent.), nine were classed as accidental (11.25 per cent.), and four were classed as type undetermined (5 per cent). It is often difficult to classify these cases unless they can be carefully studied over a long period of time, and this is sometimes impossible.

Javal[1] has probably studied alternating squint more carefully and has written more extensively concerning it than any other ophthalmologist. He states that:

> The prospect of obtaining perfect binocular vision makes the cure of alternating strabismus particularly desirable. Unhappily, the enterprise is generally difficult, for the fact of the permanence of the deviation is proof of its long standing, and the amount of time necessary to reestablish binocular vision is in proportion to the length of time it has been lost. Further, it is among these patients that there is the greatest aversion to binocular vision, and false projection. . . . Although the result may be as nearly perfect as possible, if the patient has not obtained fusion of images, he will have the most insupportable of diplopias, to escape which he will return to convergent squinting; for although the new position is almost correct, neutralization is not established at once.

He reports ten cases in which he operated, with eight successes and two failures, and he attributes the latter to neglect of the patients in following out the exercises prescribed after operation. Worth[2] says:

> Essentially alternating squints are, fortunately, not very common. The treatment consists in optical correction of any ametropia which may be present, followed in the majority of cases by operation. Fusion training is impossible, as there is a total congenital absence of the faculty of acquiring fusion.

Bishop Harman[3] says:

> In alternating types there is no value from fusion training, and operation may be done early.

Dr. R. J. Coulter,[4] in 1907, reported five cases, the oldest patient being a girl of 18, in all of which binocular

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* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Javal, E.: Manuel du strabisme, pp. 219-225.
2. Worth, Claud: Squint, Ed. 5, p. 118.

vision developed following operation. He expressed the belief that the most suitable time for operation is between the ages of 12 and 16.

It was decided to attempt to get opinions from various ophthalmologists, as so few have published their experiences with alternating squint, and my own experience was limited. Accordingly, the following questionnaire was mailed to seventy American ophthalmologists. Twenty-six replies were received and are here summarized:

Questions	*Summary of Replies*
1. Have you operated in cases of true alternating squint, either convergent or divergent, with practically equal visual acuity in the two eyes?	1. Yes, 23. No, 3.
2. If so, in how many cases?	2. Total of 206 (estimated).
3. What degree of binocular vision, if any, existed before operation, using Worth's classification? (1) Simultaneous macular perception. (2) True fusion with some amplitude. (3) Sense of perspective.	3. Few answered this.
4. What was the age of the patients?	4. From 3 to 50 years.
5. (*a*) Did diplopia follow the operation?	5. (*a*) Yes, 12. No, 8.
(*b*) If so, how long did it last?	(*b*) Few weeks, to persistent.
(*c*) Was it extremely annoying to the patient?	(*c*) Yes, 9. No, 2.
(*d*) Was it of the usual type or paradoxical?	(*d*) Usual, 5; paradoxical, 1; both, 1.
6. Were orthoptic exercises used either before or after operation?	6. None, 7; before, 2; after, 4; both, 2.
7. What degree of binocular vision, if any, was ultimately obtained?	7. None, 5. Many cases of true binocular single vision were reported.
8. Would you be deterred from operating in this type of case in an adult through fear of causing permanent diplopia?	8. Yes, 3. No, 23.

It was realized that to fill in this questionnaire fully would take more time for search through case records than most of the men would care to devote to it, yet it seemed the only way to obtain the desired information. One correspondent summed up the situation nicely by replying that if he had time to answer all the questions he would have time to write a paper on the subject. Nevertheless, many opinions were expressed that I consider of great value, especially as the combined experience of those who replied included a few hundred cases in which operation was performed.

The two really important questions were those regarding diplopia following operation and the ultimate results obtained in respect to binocular vision. It has been my impression that many surgeons are deterred from operating in this type of squint by fear of producing a more or less permanent diplopia. As only three of the twenty-six who replied answered this question in the affirmative, such does not seem to be the case. Experiences in the occurrence of diplopia following operation varied considerably. Eight reported none; twelve answered yes; the others left this question unanswered. Of the twelve who answered in the affirmative, the replies varied from "occasionally" to "usually," and the length of time from two weeks to permanent or at least continued intermittent diplopia. While only one case of permanent diplopia was actually recorded, one reply stated that it was "more or less continuous in many," and another that "when it came it persisted." Many correspondents expressed the opinion that diplopia was much more persistent and annoying in patients of neurotic temperament, and in one such case the surgeon was threatened with a damage suit.

In regard to orthoptic exercises, seven ophthalmologists did not use them; two, rarely; two, before operation; four, after operation, and two, both before and after. One man of large experience stated that exercises are of no value in the absence of the fusion faculty. Many factors tend to produce the variety of opinions expressed. The age of the patient, the exact state of the fusion faculty before operation, the nicety with which surgical correction is accomplished, and the type and extent of fusion training used—these all influence the end-results. The truth of the matter could best be arrived at by a number of ophthalmologists using the same technic in examination and treatment in a large number of cases.

There was perhaps more unanimity of opinion in regard to the ultimate results in respect to binocular single vision. Many replies were that a small percentage—probably not more than 10—obtained true binocular single vision. A few reported a much higher percentage, but many stated that but few patients attained this highly desirable result. I was unable to determine that those who used orthoptic exercises consistently fared better in this respect than those who did not. Many replies were to the effect that only cosmetic results were sought, because that was what the patient was interested in.

My operative experience with alternating convergent squint consists of five cases. Two of these patients I have been privileged to follow closely; one lives out of town and has not returned; two are still under observation and are undergoing fusion training. The first two cases are reported in detail because they are interesting, and I believe they refute some of the ideas commonly held and taught.

REPORT OF CASES

CASE 1.—C. L., a school girl, aged 10, consulted me, April 17, 1923, regarding a convergent, alternating squint. She was the third of six children. An older sister had a mild degree of myopia; otherwise, the family was free of eye complaints. At 4 years of age, it was noticed that the eyes were crossed, and the mother thought that the left eye converged first. An opthalmologist had prescribed glasses, which she had worn constantly, and the mother thought that the squint was slightly less with glasses on. The patient had had no illness except the usual diseases of childhood. She had never been conscious of double vision. The patient was well developed and well nourished, with a convergent, alternating squint, measuring 20 perimeter degrees for distance; 30 perimeter degrees for near; vision R. 20/20 mostly, L. 20/20 mostly, with and without correction, which was + 3.00 D. S. o. u. The degree of squint was not influenced by the glasses. She used either eye to fix with at will, apparently using the right eye for objects on the right and the left eye for objects on the left. Cycloplegic refraction showed: R. + 2.75 D. S. 20/20, L. + 2.75 D. S. ⌢ + 0.25 Cyl. ax 180, 20/20. Homonymous diplopia could readily be elicited with red glass and light. She could not fuse the simplest amblyoscope pictures.

The parents were advised that it was quite unlikely that fusion could be developed, and that a cosmetic result was the best that could be hoped for. However, they requested that fusion training be tried, and agreed to cooperate thoroughly. The patient could fuse, or at least put together, some of the simpler pictures with the amblyoscope by May 1, following semiweekly sessions with the instrument. She was furnished with a stereoscope equipped with a 30 degree prism base out and with Kroll's pictures. Two weeks later she could fuse all the stereoscope and amblyoscope pictures, but could not fuse colored lights. We were astonished at the rapid progress she had made thus far. She was furnished with 30 degree grab front prisms, and instructed to do bar reading twenty minutes daily. She soon mastered this form of exercise. June 12, she could fuse varicolored lights. The various exercises were continued until August 14, when it was decided that no further progress could be made. Under general anesthesia, partial tenotomy of the left internus was done by Todd's method, combined with a liberal Reese resection of the left externus. When the eyes were unbandaged on the fifth day, there seemed to be slight overcorrection. On the eleventh day, when the final sutures were removed, the eyes appeared parallel by the corneal reflex test. August 29, with the Maddox rod, there was 5 degrees esophoria, with 4 degrees left hyperphoria at 14 inches, with her correction 5 degrees exophoria for distance, 3 degrees exophoria for near, hyperphoria same as without correction. Two degree prisms were incorporated in each lens to correct the hyperphoria, and with this correction she had 8 degrees exophoria for distance and 6 degrees exophoria for near. A little later her correction was reduced to R. + 0.75 D. S. ⊃ 2 degree prism base up, L. + 0.75 D. S. ⊃ 2 degree prism base down, with which she had orthophoria for near and distance. The patient had developed diplopia immediately after the operation, but it caused her little annoyance. For several weeks she continued to see small objects double, but this gradually disappeared. Orthoptic training was continued several months. The hyperphoria disappeared, and she now has orthophoria for near and distance. She is unable to tell accurately by Hering's drop test on which side of the string an object falls. Glasses have been temporarily discarded, and she has no symptoms. This patient has recently had a severe illness necessitating an operation on the cervical glands, with no recurrence of symptoms.

This case probably belongs to the type that Worth calls accidental alternating squint, as the patient has a moderate error of refraction and has developed very good fusion power. Considering the fact that she had such a high degree of strabismus and equal vision in each eye, it seems remarkable, if Worth's dictum is true, that she developed fusion to such an extent. She may have had fusion sense early in life, and for some reason, possibly the hypermetropia, may have given it up. This, of course, can only be conjectured.

CASE 2.—J. J., a man, aged 35, an office worker, who consulted me, April 12, 1924, had had crossed eyes since early childhood. He had never had his eyes tested and had never worn glasses. He had a convergent alternating squint measuring 45 perimeter degrees for near and distance. He fixed with either eye at will, but preferred using the right. Diplopia could not be elicited, nor could he see the two pictures in the amblyoscope simultaneously. Cycloplegic refraction gave: R. + 1.50 D. S. 20/20, L. + 1.50 D. S. 20/20. Under local anesthesia a liberal resection of the left externus was done, combined with a partial tenotomy by Todd's method of the left internus. Following this operation he had 18 prism degrees of esotropia for near and twelve degrees for distance, measured by the screen test. Crossed diplopia could be elicited. Six days after the first operation, partial tenotomy of the right internus was done. Diplopia developed ten days after the last operation while the patient was putting down some figures, causing great mental confusion. At this time he had about 7 degrees right hypertropia and 14 degrees esotropia, by the screen test. The Maddox rod could not be used because of his paradoxical type of diplopia.

Intensive orthoptic exercises were begun, and he worked at them faithfully and well. His diplopia continued intermittently for several weeks, appearing especially when he was tired and for small distant objects. He can now readily fuse all the stereoscope and amblyoscope pictures, and can do bar reading uninterruptedly. He has had no spontaneous diplopia for several months, though crossed diplopia can be elicited at any time. He cannot perform Hering's drop test accurately. The right eye still deviates upward behind the screen, but with both eyes open he holds it level, and it causes him no distress.

COMMENT

It will be noted that both of these cases showed a vertical deviation after operation. I was puzzled by this for some time, until the reason became apparent after trying some experiments with a sphere and tapes attached to an elastic band, imitating as nearly as possible the pull of the lateral muscles. It can be readily demonstrated by this device that the Todd method of tenotomy will produce a vertical deviation in every case, owing to the fact that the traction is on the uncut fibers next to the eyeball, and the globe is turned in the direction in which the cut lies closest to the scleral attachment. I later found that Bishop Harman had discovered this fact and had devised a remedy, but I mention it here for the reason that it should be more generally known. Had I found this article sooner, it would have saved me considerable embarrassment, as patients are not always able to overcome this deviation.

CONCLUSIONS

Convergent alternating squint is a condition in which there is a wide divergence of opinions among ophthalmologists as to etiology and treatment.

It is a surgical condition, and one that will not be cured by glasses. One is not justified in delaying operation several years in the hope that glasses will correct the condition.

It is better to operate in childhood, because if binocular single vision is not attained, children soon learn to suppress the second image, and they are not annoyed by diplopia.

Adults may be operated on with little danger of permanent diplopia. They should be cautioned that double vision will occur and may persist for some weeks or months following the operation.

Orthoptic exercises are of great value if the patient will carry them out persistently and conscientiously under the physician's supervision. Otherwise, they are valueless. When possible, it is better to use them before and after operation, though the latter is the more important.

The opinion held by many ophthalmologists that fusion training in alternating squint is not worth while because these patients have a congenital absence of fusion sense is an error. The same may be said in regard to the theory that the fusion sense is fully developed by the end of the sixth year. This is not necessarily true, as the two cases reported demonstrate.

ABSTRACT OF DISCUSSION

DR. WALTER B. LANCASTER, Boston: The most important point brought out is the question of securing binocular vision in cases of alternating strabismus. It is one on which there has been a difference of opinion. In some cases of alternating strabismus, the fusion faculty is nil. In those cases no amount of training will develop binocular vision. But in other cases of alternating strabismus, those in which there is a latent fusion faculty, it can be developed. To understand this, it is necessary to consider the natural history of a case of strabismus. When a child begins to develop the power of squinting which to him is an advantage—he sees easier that way—the first thing he has to do is to suppress the diplopia, and until he has learned to do that he cannot squint to advantage. If he has amblyopia in one eye, either congenital or from any cause, it becomes easier to suppress the diplopia by suppressing the image of the defective eye, and he soon acquires facility. If the eye is not amblyopic, it frequently becomes so from lack of use. Suppose he does not develop an amblyopia. If he has a squint, he must learn to suppress the diplopia. His fusion must be kept in abeyance, and if he has some fusion power at the start he must antagonize that and keep it from being exercised at all, with the result that later on he seems to have lost the power of fusion. If the patient is seen at this stage, one cannot tell whether he has latent faculty or not. The only way to settle it is by trying. Possibly the history may throw some light on that question. In Dr. Goar's first case the squint did not begin until the patient was several years old. During that period, therefore, the fusion must have been exercised. Later it became suppressed. With such a history we can assume there is a fusion power. It has been suppressed, but we can cultivate it. Similarly, in cases of monocular squint the first step is to convert them, if possible, into the alternating type. We then strive to develop binocular vision. If the parents say that the child has suffered from birth, I would not wish to imply that that proves there is no possibility of fusion. In the first place, such a report by the parents is very unreliable,. and, in the second place, I do not think we have definite information on which to base such an opinion.

Dr. Luther C. Peter, Philadelphia: Many points of interest in Dr. Goar's paper have a more or less direct relation to the state of the fusion faculty,.the conditions of which are concisely grouped in Worth's classification. If a case under discussion is properly classified, some of the questions raised by Dr. Goar are easily answered. Patients that fall in the first group, possessing simultaneous macular perception with a total absence of the fusion faculty, in my experience are rarely annoyed by diplopia after operation. This group of cases does not show any tendency to improvement under fusion training either with the amblyoscope before operation, or with the amblyoscope or stereoscope after operation. Early operation is always indicated, although one need not be deterred from operating in adult life. The ability of the patients in this group to disregard the image of the nonfixing eye is probably developed to a higher degree than it is in those who possess a fusion faculty, although imperfectly developed. Patients that fall in the second and third groups of Worth's classification may have some temporary diplopia, which disappears with proper orthoptic training. In no instance has it been my misfortune to find a persistent diplopia after operation. It is probable, too, that diplopia, when present, is in part due to vertical disturbance caused by a slightly misplaced attachment when and advancement is performed. If fusion training is practiced before operation and again after the eye has been operated on, the likelihood of anything but a temporary diplopia is reduced to a minimum. Furthermore, the same training will result, in a majority of instances, in single binocular vision if the corrective procedure is performed with accuracy. In either group one can obtain a fair idea of the probability of diplopia after operation by the use of the red glass before operation. The important facts brought out in Dr. Goar's paper are: First, the necessity for a careful study of the case before operation, with reference to the state of the fusion faculty; and, second, the importance of routine orthoptic exercises before the patient is brought to the operating table, and the necessity for a renewal of the same training after the operation has been performed. In the particular type of squint referred to in this paper, if a fusion faculty is present, although imperfectly developed, the careful use of fusion training before and after operation usually is the deciding factor in the case, whether the operation is only a cosmetic one or the patient is to enjoy a single binocular vision after operation.

Dr. Oscar Wilkinson, Washington, D. C.: The explanation of the success obtained in Dr. Goar's second case can be found by going more deeply into the history of the case. It has been my observation that when we are able to secure binocular vision in these older subjects, that is, in patients over 12 years of age, as a rule these patinets are late squinters and have enjoyed binocular vision for a number of years before they began squinting. This would explain their ability to regain that function so late in life. It has been my observation that alternating squint is as easily cured as the constant monocular variety, particularly when there is a marked loss of vision, in subjects that have squinted for a number of years. As a matter of fact, the cure of all types of squint depends entirely, one might say, on the length of time the patient has squinted. All types of squint, save the congenital squint with amblyopia, are amenable to early treatment. This is particularly true of the alternating type. All types of squint that are not relieved by the use of atropin, glasses and orthoptic exercises within one year become operative cases, and it is just as much our duty to operate in these cases early as it is to operate in a case of acute glaucoma. Two years ago, I reported a method of operating in these cases by which the amount of shortening of a given muscle can be measured. With reference to essential squinters, I believe that less than 1 per cent. in those alternating cases are real essential squinters, so typically described by von Graefe and so graphically explained by Savage. It has been my observation that these patients with antipathy to binocular vision have squinted for many years, and could not in any way acquire binocular vision on account of the great degree of squint. Had they been seen early and treated properly, I believe they, too, would have acquired binocular vision. I have not yet brought myself to the point at which I can believe that Nature often falls down on her job and hooks up visual nerves so poorly as to produce an essential squinter.

Dr. F. H. Verhoeff, Boston: Such a remarkable fact as that patients as old as these may squint all their lives and still have binocular vision should be demonstrated by very conclusive evidence. In looking over the details given of these two cases, however, I cannot find anything to convince me that these patients had true binocular vision. Because the patients were taught not to suppress and thus to see the two pictures in a stereoscope simultaneously does not prove they had true binocular vision. The bar reading test does not prove that a patient has stereoscopic vision. He reads on one side of the bar with one eye and behind it with other. The only test mentioned, if properly done, that would prove that the patient had real binocular vision was the Hering test, and the author states that neither of the patients could pass this test. A simple test to show whether or not a patient has binocular fixation is the cover test, but apparently this was not tried. In 1903, I published a very simple test which, I think, is the only one yet suggested which proves with absolute certainty that a patient has stereoscopic vision. What the patient sees with this test it is impossible to see with either eye alone, and, in fact, can be seen only when there is fusion of the two images. I have been surprised to find that this principle has not even yet been embodied in any of the stereoscopic diagrams commonly used for testing patients.

Dr. Everett L. Goar, Houston, Texas: I do not know any way of telling whether a squinter has had fusion at one time or not, except that it might be inferred from the history. In the second case reported, the history stated only that he had squinted since early childhood. Concerning the matter of whether these patients developed binocular single vision or not, Dr. Verhoeff is more or less right. There are various grades of fusion sense, as I understand it, as there may be of any other sense. These patients did not have perfect binocular single vision, as evidenced by the fact that they could not do Hering's drop test accurately—probably the ultimate criterion of binocular single vision. It has been well established by Worth and other men that if with the amblyoscope patients can invariably tell which end of a glass is pointing toward them, they have sense of perspective. It is my belief that patients who can do bar reading properly have binocular vision. These patients lost their diplopia and developed ability to note the third dimension and nothing more than that is claimed for them. They are not concerned because they cannot do Hering's test.

RELATION OF INTRANASAL DISEASE IN THE PRODUCTION OF BRONCHIAL ASTHMA

REPORT OF CASES [*]

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Nasal accessory sinus disease is a very common finding in patients suffering with bronchial asthma. Because of this occurrence, many thoughtful investigators have suggested that there is an etiologic relation between disease in the paranasal sinuses and this baffling malady. There are four conceivable ways by which the symptom complex called asthma may be produced through nasal disease. Mucopurulent material may drip into the pharynx from an infected sinus and the infection gradually involve the mucous membrane of the trachea and bronchi. Mucopurulent material may be retained in a sinus and the toxic products be absorbed through the blood stream or lymphatics or both and produce allergic phenomena that may manifest themselves in asthma. The nose may be obstructed by polypi and enlarged turbinates, and the patient is compelled to breathe constantly through the mouth, and the effect of cold and dry inspired air, combined with the presence of infected material on the sensitive mucous membrane of the trachea and bronchi, might conceivably be the exciting factor in the production of bronchial asthma. Finally, a spasm of the musculature of the bronchi might be produced through nerve reflex by irritation or disease of the nasal ganglion.

Sluder,[1] in discussing the sympathetic syndrome in relation to nasal ganglion disease, makes a very plausible explanation as to the manner in which a patient suffering from an acute rhinorrhea develops symptoms which cannot be differentiated from those of bronchial asthma. The text of the rationale is as follows:

> It is generally admitted that the functions of the sympathetic nervous system among others are vasomotor and secretory. Sensory attributes have also been proved for it. Anatomically the fibers of the cervical sympathetic from the nasal ganglion pass downward by way of the vidian and carotid plexus to the cervical sympathetic and give branches to the cervical nerves and proceed finally to the lower cervical ganglion, which is in intimate connection and often fused with the first thoracic. These ganglia are anatomically in association with, or allied to, the nerves which in addition to supplying the neck also make up the brachial plexus and supply the upper extremity. Accelerator fibers for the heart and vasomotor fibers for the lung also pass through these ganglia.
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> The anatomical and physiological problems of the autonomic nerves (sympathetic) are very complex, and a clinician may well hesitate approaching them; but it would seem that the knowledge of the present on this subject permits the thought that it is a lesion of the sympathetic elements of the nasal ganglion that explains not only these vasomotor secretory phenomena but also the pain referred into the neck, shoulders, arms, etc., the vidian neuralgia; and that these referred pains probably come to pass by virtue of the sympathetic fibers which arborize about cells (Thane, Van Gehuchten, Dogiel, Retziens) in the spinal ganglia of the nerves which make, eventually, the supply of the neck and the upper extremity. Also, the thought arises that it is the anatomical connection of accelerator fibers for the heart and vasomotor fibers for the lungs with the ganglia through which the cervical sympathetic passes (lower cervical and first thoracic) that explains some of the cases of asthma of nasal origin; and that the path of the impulses is from the nasal ganglion through vidian, upper, middle and lower cervical and first thoracic ganglia, through the last two of which pass the heart and lung fibers.

Dennis[2] reports that out of sixty patients having nasal accessory sinus disease, twenty-four had bronchiectasis and twenty-eight had had asthma; the remainder had other remote complications. In practically all cases of bronchiectasis and asthma the maxillary sinus was diseased. In all but one case, a number of sinuses were involved and the trouble was usually bilateral. In many of these cases a positive diagnosis was not made until the sinus was opened and inspected. Dr. Dennis is disappointed with the roentgen ray as an aid to diagnosis. At times the pictures were misleading. In the fifty-two cases of bronchiectasis and asthma, pus was found in the sinuses only thirteen times, while in the majority of those remaining, hyperplastic changes were observed in the mucosa. In all the cases, operations were done on one or more sinuses, and of the twenty-eight cases of asthma, nineteen were improved or temporarily improved, four not improved, and five not noted. He suggests that the patients be operated on as early and as thoroughly as possible. In this article no reference is made about the relation of allergy to asthma.

Lintz[3] deplores operations of any variety for the cure or relief of asthma. He reports that of fifty-six patients who have had one or more operations on the nose or throat, in only one instance was there relief from asthma for a period of three years; in the rest there was none at all. He believes that these patients belong to the status thymolymphaticus group and should be left alone. He is convinced that if the allergin is determined and eradicated or the patient desensitized, the indications for operative intervention will disappear.

Haseltine[4] states that "a patient cannot have bronchospasm with a previously entirely normal nose." He therefore leads one to conclude that he believes that all cases of bronchial asthma are due to disease in the nose, and he designates the ethmoid region as the area in which this disease exists.

It will readily be noticed from the opinions of the authors referred to that their deductions are based on findings which are essentially studies of this problem from a single angle and not from a broad understanding and correlation of all the possible data that one may bring to bear on this question. Most of the opinions expressed are no doubt true as far as they go, and add a great deal of food for contemplation when considered collectively.

Among 117 cases of asthma studied in my private practice in which very careful records were kept and thorough studies made, I find that in all there were thirty-one cases of disease in one or more of the paranasal sinuses. Eighteen of these were of the chronic purulent type and thirteen of the hyperplastic. In the eighteen purulent cases, eleven patients were sensitive to one or more proteins and seven were not sensitive. In the thirteen hyperplastic cases, seven patients were sensitive, five nonsensitive, and one not tested.

In all there were eighteen sensitive patients who had definite unmistakable intranasal disease. Five of these were sensitive to bacteria, and the other incidental sensitiveness that was encountered was negligible. Three were sensitive to other proteins, but this sensitiveness was found to be so mild that it could not be considered as an exciting factor in the production of the bronchial asthma. In the remaining ten cases in which sensitiveness was elicited, the allergic reactions were so pronounced that there is no room for doubt that the symptoms were produced by it. The intranasal disease was a concomitant factor which served to augment the symptoms. This group of cases will be dismissed with the statement that the allergic condition found should be treated according to conventional lines, and that the intranasal disease be as thoroughly evacuated as is consistent with good surgery, and that as a rule the results will be good unless a chronic bronchitis with peribronchial changes has already supervened, in which instance only relief can be expected.

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[*] Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Sluder, Greenfield: Headache and Eye Disorders of Nasal Origin, pp. 73, 74.

[2] Dennis, F. L.: Ann. Otol., Rhinol. & Laryngol. **33**:451 (June) 1924.

[3] Lintz, W.: Ann. Surg. **79**:917 (June) 1924.

[4] Haseltine: Clin. Med., February and March, 1925.

I am firm in the belief that the bacterial and other slight protein sensitiveness elicited in the aforementioned eight cases should be disregarded. I am convinced that a slight reaction to bacteria or other protein is not a competent exciting cause for the paroxysmal seizures of bronchial asthma. I do, however, believe that basically these patients have a tendency to asthma and in their particular cases the nasal accessory sinus disease is the exciting, and their constitutional make-up the predisposing etiologic factor. This also applies to the cases in which no sensitiveness was elicited, with the exception of cases of pure reflex asthma, which are rare. The fact that sensitiveness is not found is not a good argument that it does not exist. The nonsensitive patients will therefore be considered with the eight slightly sensitive ones, making in all, twenty-one.

Accordingly, bronchial asthma from disease of the paranasal sinuses may be produced in one or two ways, or a combination of them; namely, by absorption of proteins from the region of the disease in the nose or by irritation or actual inflammation of the nasal ganglion or its related nerves, producing reflex asthma.

ABSORPTION CASES

In those cases wherein purulent disease is found, it is likely that the symptoms are the result of absorption of a protein material from the diseased area. This belief is not fortified by scientific experimental information but is based solely on clinical experience. It was found that the symptoms of asthma would disappear for a time after the sinuses that were found to be diseased were opened freely and drained and autogenous vaccines given. Then a relapse would occur which was not ameliorated by either more surgery or autogenous vaccines. When, however, a series of intravenous injections of typhoid vaccine or other nonspecific protein-containing substances was given, the symptoms subsided and the patient remained well for a longer or shorter time. The symptoms may reappear, but a few more injections of nonspecific protein will quickly cause them to disappear. This treatment works better after the sinuses have been opened widely and all diseased tissue has been removed. I have a number of such cases in my files, and for the sake of contrast will relate the histories of two cases, one in which treatment with nonspecific proteins was given without operative procedure, and one in which operation was done prior to the nonspecific protein therapy.

Case 1.—Miss D. H., aged 28, a clerical worker, seen, Oct. 30, 1924, had become very hoarse several months before, and had her first attack of asthma four months before. Since then she had had wheezing and shortness of breath every night. All these symptoms followed a severe cold in the head. At present she expectorated white or yellow sputum during the entire day. Cloudy mucus could be seen to drip from the regions of both superior meatuses. There was polypoid degeneration of the posterior portion of the left middle turbinate. Large and small moist râles could be heard all over the lungs, but more at the bases. She was not sensitive to any of the bacteria found in her nasal discharge or to any of the 119 proteins with which she was tested. She was relieved for only three and one-half hours after 50 per cent. cocain solution was applied to the region of both nasal ganglions. Suction and douche were of no avail. She received four days of complete relief after an intravenous injection of 100 million mixed typhoid bacilli and had received six injections, all told. The injections were given at from two to three weeks apart. Except for a short severe attack incident to an acute cold in the head, she has been very comfortable, sleeps mostly every night through, and attends business each day.

Case 2.—G. C., a man, aged 30, a clerk, seen, May 27, 1924, for ten years had had shortness of breath, wheezing and coughing. Before the advent of the asthmatic attacks he was treated for epistaxis and nasal polypi. Before the attack began, nasal breathing was obstructed. Cough preceded the wheezing. He had had a nasal discharge for many years, and his nose had been operated on many times. There had been periods during the past ten years when he was entirely free from symptoms. He was not sensitive to any protein or autogenous suspension of bacteria isolated from the nasal discharge. Although the ethmoid areas gave visible evidence of having been subjected to surgery, the tissues in this region were soggy and polypoid, and a yellow, thick discharge was seen to exude from many places. Suction, douches and autogenous vaccines gave the patient some relief, but as soon as this treatment was discontinued, the symptoms recurred with the same intensity. Cocainization of the regions of both nasal ganglions gave him relief for only a few hours. It was then decided to clean out all the exuberant tissue from the ethmoid and sphenoid region and then expose the denuded surfaces to radium emanations in an effort to prevent the recurrence of the polypi. Exposure of 600 millicurie hours was used in both nostrils. For a short time following this treatment, the patient felt very comfortable and was able to resume his work. Then the symptoms returned with such fury that the patient was completely incapacitated. I then consulted Dr. Ross Skillern, who advised that whenever the ethmoid regions showed signs of filling up with water-logged tissue or polypoid growth they should be immediately attacked and in between surgical efforts the nasal passages should be tamponed two or three times weekly with 10 per cent. protargin mild solution. Notwithstanding the fact that this program was religiously followed for about one month, the symptoms continued unabated. November 4, he was given 100 million mixed typhoid bacteria intravenously and was not seen again until Jan. 30, 1925, when he stated that about one week after the injection he began to feel better and felt comparatively well. No visible polypi were observed in either nostril. A slight amount of cloudy mucus was present on the floor of the nasal chambers posteriorly. Very occasional dry râles were heard over the larger bronchi. February 2, another similar treatment of mixed typhoid vaccine was given intravenously and he has been well up to date.

Time does not permit me to relate the comparable cases from this group, but I can say with a great deal of assurance that the results are sufficiently encouraging to stimulate one to continue along these lines.

REFLEX CASES

On looking back into my records, I find cases that I failed to classify as reflex in nature. For instance, a case of bronchial asthma in which symptoms developed after a bilateral ethmoidectomy; another in which symptoms occurred a short time after a tonsillectomy that left broad scars running into the palate. A third patient developed asthma after I removed large masses of polypi from both ethmoid regions. This last case is interesting because of the fact that after most of the polypi were removed, a large succulent polyp hung down into the naso pharynx. A ridge on the septum prevented me from snaring it off, and it was evident that a submucous resection would be necessary before it could be removed. The patient developed asthma before the septum operation could be done, and he never returned.

The first two cases were thoroughly investigated and tested with proteins, and no other deduction can be made except that they were of reflex origin produced by involvement of nerve trunks in scar tissue. The last was not tested, but from the sequence of events, one could with certainty conclude that the large polypoid masses hanging from the region of the nasal ganglion produced enough traction in that area to cause irritation. Knowing what I do now about this phase of the subject, I am convinced that these three patients would have been relieved of their symptoms by injection into the nasal ganglion.

Children who suffer with symptoms of bronchial asthma directly on the advent of an acute nasopharyngitis may well be included in the category of reflex asthma, because the cough, dyspnea and cyanosis come on quickly after the nasal or pharyngeal symptoms become manifest. Furthermore, treatment directed to the nose and the upper recesses of the postnasal space usually ameliorates the symptoms. I feel that I am extremely fortunate in being able to report the following case, because in its symptomatology it embodies most of the spasmodic phenomena included in the reflex syndrome as described by Sluder:

Case 3.—L. B., a girl, aged 7, seen May 22, 1923, had had attacks of asthma since her fourteenth month of life. Attacks were usually preceded by cold in the head. She had no nasal discharge, cough or expectoration between attacks, nor were there any symptoms of asthma when the acute infection had passed away. When the attack begins she sneezes a great deal, there is slight nasal discharge and postnasal dripping, and then follow sequentially a tracheal cough, dyspnea, cyanosis, and lastly nausea and persistent vomiting. The attacks can be shortened by giving atropin sulphate to the physiologic limit by mouth, and suprarenal extract followed by a solution of neutral acriflavine 1:1,000 instilled into the nose frequently. The attack can be prevented by using the same treatment just as soon as the nasopharyngeal infection is evident. This patient has been thoroughly studied, and it has been found that she has a hyperplastic sphenoiditis and ethmoiditis. She is also slightly sensitive to a number of proteins, but no restriction is made in her diet, as it has been found that these do not excite the attack; they may, however, be predisposing factors.

Many children suffer with asthma. Among these there are some who have no demonstrable allergy but whose noses are more or less constantly discharging or there is postnasal dripping. These patients suffer with nasal obstruction when they try to go to sleep, and catch cold easily. Treatment directed to the back of the nose in the region of the posterior ethmoid cells usually is followed by good results. It is impossible to say that this class of case belongs to the absorption or reflex group or a combination of both. The following case history will illustrate this type:

Case 4.—H. E., a boy, aged 7 years, seen, Nov. 11, 1924, since his tenth month of life had attacks of difficult breathing. Three years ago he had his tonsils and adenoids removed. For two years following this, he was free from symptoms. During the last five months he had attacks of coughing, wheezing and dyspnea, particularly at night. As a rule he coughed during the day and had asthmatic attacks at night. His nose was constantly discharging, and he caught cold frequently. An aunt on his maternal side had asthma. He was tested with 119 proteins, but no positive reactions were obtained. The inferior turbinates were large, and mucopurulent material rested on the floor of the nose. Both middle turbinates were enlarged and more or less filled the upper part of the nasal chamber. Around and about the middle turbinates, mucus and pus could be seen. The nasal breathing was obstructed. Twice weekly, the turbinates were shrunken with suprarenal extract and then suction applied, followed by a warm douche. Just before bedtime a few drops of a 1:2,000 solution of suprarenal extract was instilled into both nostrils, and five minutes later both nasal chambers were flooded with freshly prepared 10 per cent. protargin mild solution. Under this regimen the symptoms stopped and the child has been well since.

CONCLUSIONS

Every case of bronchial asthma should be investigated from every angle. The result of the findings of the internist, clinical microscopist, immunologist, bacteriologist, roentgenographist and rhinologist should be studied as a whole and deductions made from this evidence.

Disease of the paranasal sinuses is competent to produce the complex called asthma. From an etiologic standpoint, intranasal disease, as it is related to bronchial asthma, may be classified as follows:

1. Asthma with unmistakable allergic findings, complicated by chronic purulent or hyperplastic sinusitis.
2. Asthma with slight or no allergic finds associated with chronic purulent or hyperplastic sinusitis.

(*a*) Cases of asthma due to the absorption of protein radicals from an area of disease in the paranasal sinuses.

(*b*) Cases of asthma of purely reflex origin, the nasal ganglion being irritated or rendered diseased from an adjacent sinus infection, or stimulated by impulses which come from correlated nerve fibers.

(*c*) Cases of asthma of combined absorption and reflex character.

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ABSTRACT OF DISCUSSION

Dr. I. S. Kahn, San Antonio, Texas: Speaking from the point of view of the allergy worker, this is the fairest paper on this subject from the other side that I have encountered. I believe it possible to explain several apparently contradictory points. Regarding asthma as a condition of inherited cellular hypersensitiveness, clinical symptoms will depend on the degree of hypersensitiveness and the dosage of antigenic factors received. For instance, I have a patient at the present time, a child, who is slightly sensitive to feathers. Ordinarily he can sleep on feather pillows without getting asthma; but if he develops an acute infection of the upper respiratory tract, he will invariably have asthma. This boy with a cold will not have asthma if kept on a cotton pillow at night. Obviously, the infection of the upper respiratory tract increases the hypersensitiveness present. In pollen cases this dosage received varies according to the atmospheric air pollen content, increasing in high winds and decreasing in rainy seasons. In judging surgical results in asthma, this should be taken into consideration; that is, no patient should be considered helped until the effect of contact during the succeeding pollen season or seasons is known. There is evidence that pollen asthma may exist without positive skin tests. To my mind, hypersensitiveness to any allergic factor is increased by acute or chronic infection. Removal of nasal sepsis certainly reduces hypersensitiveness, in a small percentage of cases to a degree to clear up clinical symptoms. The numerous failures to correct asthma by intranasal therapy makes this percentage obviously small. The allergy worker attains the same result by the usual desensitization methods, merely approaching the same problem from a different angle. However, it must be remembered that in many of these cases the supposed acute infectious cold is actually vasomotor rhinitis. The eosinophilic blood count will assist in making the differential diagnosis.

Dr. Mark J. Gottlieb, New York: I do not believe that a very slight degree of sensitiveness is sufficient to cause symptoms. I laid particular stress on that in my paper. I do believe that an activating factor like cold may produce very severe symptoms. I have seen only one instance in which a patient with hay-fever did not give a skin reaction to pollen, no matter at what time of the year the test was made. In the particular case in which I did not obtain a reaction, it seemed that the patient had a peculiar sensitiveness of his mucous membrane and not of his skin. The eosinophil count, to my mind, is of questionable value because one finds in a great many cases of hay-fever and asthma that the eosinophil count is anywhere from 1 to 8 per cent., and if one happens to get one with a count of 1 per cent., one would not place any reliance on that.

TETRA-ETHYL LEAD POISONING

CLINICAL ANALYSIS OF A SERIES OF NONFATAL CASES *

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Lead in various forms has been recognized for a long time as one of the important occupational poisons. The zealous study and the insistent presentation of the characteristics of the condition have outlined a clinical picture which is a matter of general medical instruction and knowledge, in spite of the controversial nature of certain diagnostic details. The manufacture and handling of tetra-ethyl lead, resultant on its recent development for important industrial purposes, has brought about the appearance of a type of lead poisoning which, because of its unique character, is made the subject of this paper.

Tetra-ethyl lead is a clear, heavy (specific gravity about 1.62), oily liquid with a peculiar sweetish odor, which is somewhat volatile at ordinary temperatures. It is insoluble in either hot or cold water, but soluble in alcohol and acetone, and miscible in all proportions with fats and oils. It decomposes in the presence of sunlight with the formation of crystalline triethyl lead oxid, which in the presence of a halogen forms the triethyl lead salt. Crude tetra-ethyl lead and old containers of tetra-ethyl lead are likely to show the presence of this oxid or the halogen salts. The salts are water soluble. They have a peculiar odor not wholly unlike that of tetra-ethyl lead, and when inhaled in even very low concentration, they cause violent sneezing and a marked irritation of the mucous membranes. Tetra-ethyl lead is not immediately corrosive when applied to living tissues, but after exposure for some time necrosis results. If allowed to remain on the skin for half an hour or more, little or no sensation is produced, but desquamation occurs after a day or two, leaving white and glistening patches. However, if removed from the skin (best done with kerosene) within a short time after its application, no harmful effect on the skin is produced.

It would be assumed that such a compound of lead is a general protoplasmic poison, and in fact chemists in general have regarded it as such. Observation and experimentation have confirmed the truth of this assumption, and have shown the extent of toxicity, the avenues of admission into the body, and the clinical features that develop in the course of the poisoning. The peculiarities of the poisoning are striking, so much so that the condition often bears little resemblance to any of the clinical types of lead poisoning except the infrequent lead encephalitis. Nevertheless, it cannot be doubted that the lead is the essential toxic agent in the compound. In fact, its toxicity is of the same order of magnitude as that of other well known compounds of lead.[1] The peculiar symptoms and signs produced are due, in all likelihood, to the physical and chemical properties of the compound, which permit a more rapid absorption through the skin and lungs than is possible in the case of the more common lead compounds. More important, perhaps, is the fact that its distribution in the tissues may be confidently expected to differ from that of the usual lead compounds, in that its solubility in fats predisposes its early localization in relatively high concentration in tissues of high fat content, such as adipose tissue, the central nervous system, and the liver.

MODES OF ENTRANCE

It has been shown experimentally that tetra-ethyl lead is capable of producing illness and death of animals when inhaled as a vapor, when absorbed through the skin, and when administered orally or intravenously.[1] Under any one of these conditions death may be brought about in the course of from three to six hours, though minimal lethal doses kill in from twenty-four to seventy-two hours, ordinarily. Even intravenous administration does not produce immediate or even quick death, unless injected in such quantities and at such a rate as mechanically to block large pulmonary vessels. (Tetra-ethyl lead is immiscible with blood and does not cause coagulation. It may well be that poisonous properties depend on some degree of decomposition of the tetra-ethyl lead molecule.)

In man, poisoning is produced as a result of the inhalation of the vapor of tetra-ethyl lead, and also as a result of skin absorption. It may be produced accidentally or carelessly by ingestion, but in the industrial handling of tetra-ethyl lead such a source of poisoning is not encountered to any important degree. Usually, illness in men has been the result of the combination of skin absorption and inhalation of vapor over a considerable period of time. (The inhalation of the dust of the triethyl lead decomposition products of tetra-ethyl lead has also been seen to produce illness, which, under the conditions of observation, could not be differentiated from that due to tetra-ethyl lead alone.) However, an acute, even fatal poisoning may result from exposure either to a high concentration of vapor for a comparatively short time (several working days), or to a large quantity allowed to remain on a large skin surface.

SYMPTOMS

Under conditions that allow of the absorption of tetra-ethyl lead in any manner, in sufficient quantity, an illness develops in which some or all of the following subjective symptoms appear:

Insomnia.—This is one of the earliest and most troublesome symptoms. It may be so severe as to prevent any sleep for days at a time, or it may cause only frequent waking. In severe cases, any sleep that is obtained by the affected person is likely to be fitful and disturbed, with frequent twitchings of the body, frequent movements, and crying out. The complaint is frequently made by the patient that his mind is too active to allow sleep, and that when asleep or awake he is in a dream or dreamlike state in which all kinds of grotesque and unusual situations arise. The attempt to sleep is more fatiguing than to remain active.

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[1] Kehoe, R. A.: The Toxicity of Tetra-Ethyl Lead and Certain Lead Salts, to be published.

Nausea, Anorexia and Vomiting.—These symptoms are most pronounced in the early morning. A sickening taste, not described as metallic, contributes somewhat to the development of these symptoms. The person affected contemplates breakfast with a positive aversion, though as the day goes on he feels better and often eats heartily and with relish in the evening. However, an attack of nausea and vomiting may be precipitated at any time by the odor of tetra-ethyl lead, or even other odors that are objectional to him.

Vertigo and Headache.—Neither of these is pronounced in most cases, though something approaching them, in the form of a dull, full feeling in the head is often complained of. Occasionally, however, the vertigo is strikingly in evidence.

Muscular Weakness.—Some degree of weakness is a constant finding, and is commonly a very persistent complaint. It does not appear until the insomnia and anorexia are well established, and appears to be due in most cases to inadequate rest and food.

Itching of the skin is an occasional disturbing symptom.

OBJECTIVE SIGNS

The symptoms mentioned are unvaryingly accompanied by the following signs:

Pallor.—This is so uniform as to be impressive. It is not due to a blood destruction, but rather to a generally inadequate circulation brought about by a pronounced fall in blood pressure.

Subnormal Blood Pressure.—The blood pressure changes are seen early. They represent among the most reliable diagnostic signs. The systolic pressure may go as low as 80 mm. of mercury in a patient with a previously normal pressure. The diastolic pressure is relatively lower in almost every case, the pulse pressure being from 50 to 70 mm. of mercury.

Subnormal Temperature.—The temperature is extremely low in the early morning hours, often being as low as 96 F., rarely being above 97 in affected persons. It ascends during the day, but is usually subnormal throughout the entire twenty-four hours.

Loss of Weight.—This is a constant finding, varying from slight to great decreases, such as 15 pounds (7 kg.) in two or three weeks.

Tremor.—A well defined and coarse tremor is seen in most cases. With this the reflexes are exaggerated, and the muscles themselves are commonly hyperirritable, responding easily to mechanical stimulation. Occasionally the tremor is the most striking sign. In such a case there is a continuous tremor, exaggerated when an attempt is made to control it, and increased greatly by sudden, unexpected noises or events. The sudden twitching of an arm or leg may arouse the subject from sleep or cause him to drop an object held in the hand.

Peripheral neuritis, with paralysis or anesthesia, has not been seen in any of these cases, though a few cases have been reported elsewhere.

There is an increased respiratory rate, and a decreased pulse rate.

Gastric and intestinal cramps are not an important item in the clinical picture. In the few cases in which they have appeared, they have not been severe. They have never been the cause of initial complaint. Neither constipation nor diarrhea is seen often.

Blood Findings.—There is no characteristic blood finding. Hemoglobin determinations, carried out regularly on all patients, have failed to yield any information. In one or two cases there has been a very slight diminution, but in no case has it been significant. (Determinations were made with the Dare instrument.) There is little in the microscopic examination of the blood to indicate destruction of the erythrocytes. Polychromatophilia and stippling are found in a high percentage of cases of slow absorption over a period of months, but in cases in which there is evidence of rapid absorption, stippling is very commonly absent. Even in the cases that show polychromatophilia and stippling (and these are never pronounced blood pictures, such as are frequently seen in ordinary types of lead poisoning) there is no appreciable diminution of erythrocytes.

Lead Line.—The appearance of a lead line on the gums is not a constant, nor even a frequent finding. A lead line has been seen in several cases, and in two cases the line has been quite pronounced and characteristic. Yet this is not an early or important item in the diagnosis.

Urinary findings are meager except for the presence of lead. There is a constant hyperacidity of the urine in all severe cases, the urine remaining strongly acid to methyl red during the entire twenty-four hours. Albumin does not appear in the urine of even severly poisoned persons.

Lead Excretion.—Lead is excreted in larger quantities than is seen in most cases of lead poisoning. Excretion occurs by way both of the kidneys and of the alimentary tract. Usually the excretion in the feces exceeds that in the urine for a corresponding period of time. However, in one case, the urinary excretion uniformly exceeded that of the feces. The quantity excreted in a twenty-four hour specimen of urine has varied from nil up to 8.4 mg. of lead.

CLINICAL TYPES

In mild cases of poisoning, where the exposure has been slight and brief, insomnia and anorexia, with a slight drop in blood pressure and temperature, are frequently the only findings. In such a case the examination of the blood has failed to yield the slightest information. Instead of sleeplessness, the victim may complain of being disturbed in his sleep by frightful dreams. In the course of a few days, this condition disappears almost entirely, though it may leave the blood pressure subnormal for from one to three weeks.

In cases in which the symptoms are mild, but in which there has been a slight exposure over a considerable period of time (months), there is likely to be a change in the blood picture, in addition to the foregoing symptoms. A lead line has been seen in a few such cases also. Here careful examination of smears usually shows an occasional stippled erythrocyte, without the diminution of hemoglobin or the number of erythrocytes. The leukocyte count in such a case is commonly, though not constantly, increased from one or two thousand above the previous normal. Both the symptoms and the abnormalities in the blood picture tend to disappear quickly following cessation of exposure and the instigation of therapeutic measures.

In more severe cases, the symptoms are more numerous. Loss of weight, insomnia and anorexia are especially pronounced. With the improvement of the patient, lassitude, weakness on exertion, and the subnormal blood pressure and temperature become the most prominent symptoms. The persistence of this condition may be so striking as to simulate the chronic fatigue of low grade infectious diseases. In the course of from six to ten weeks, however, all the symptoms disappear, and no residual effects can be found.

In acute cases, a central nervous system involvement is seen at once to be the essential characteristic of the condition. The patient is irritable, "nervous" and in a constant state of excitement, which may progress to such an extent as to render him maniacal. The mania resembles an alcoholic delirium very strikingly. In it the victim talks constantly and is in constant fear of animals or persons that are on the point of attacking him. His struggling to escape is continuous, and unless restrained or quieted in some fashion, he is likely to attempt to escape in any manner possible, even to leaping out of an upper window. The outcome of such a case is almost uniformly fatal, death occurring apparently from exhaustion.

DIAGNOSIS

The diagnosis of tetra-ethyl lead poisoning is to be made from a careful consideration of the symptoms and signs, together with a history of exposure. On the one hand, such poisoning may not safely be excluded because of the absence of the signs considered characteristic of ordinary lead poisoning. On the other hand, none of the items that go to make up the clinical aspect of this condition are characteristic of it alone. The conditions that offer the greatest difficulty in making a differential diagnosis are tuberculosis, syphilis, chronic myocarditis, chronic and subacute sinusitis, and other chronic infections with systemic intoxication. The finding of significant quantities of lead in the urine and feces may well be the only certain differential point in certain cases. However, the greatest difficulties in diagnosis are likely to be seen in those cases in which there is doubt as to a significant exposure to tetra-ethyl lead.

TREATMENT

The treatment that has been employed in the cases here discussed has been based on several considerations, in the absence of specific remedies. Lead is excreted by the poisoned person in the form of inorganic compounds, in part, at least. It seems obvious, therefore, that this organic compound is partially, if not wholly, converted into inorganic compounds of lead. From this it would follow that the variations in the symptomatology of tetra-ethyl lead poisoning, as opposed to ordinary lead poisoning, arise either from a unique distribution of lead in the tissues or from a great difference in the actual quantities present in the body. Assuming the correctness of these conclusions, the treatment of tetra-ethyl lead poisoning need not differ from the treatment of lead poisoning of other types. Accordingly, a type of treatment was employed that has demonstrated its efficacy in several types of heavy metal poisoning. The experimental basis of the method [2] and the clinical evidences [3] of its value appear elsewhere. The principles underlying it are as follows:

1. Heavy metals combine with and injure living tissue.
2. The combination of heavy metal and tissue may be both prevented and broken by the presence of sufficient concentrations of salts of the light metals, in such a way as to restore the tissue to normal physical state, and to free the heavy metal in soluble form for excretion.
3. The symptoms of acid intoxication and edema, associated with heavy metal poisoning, especially of the acute type, may be combated effectively by the same means.

The actual treatment consisted of the administration of mixtures of sodium bicarbonate or sodium citrate, magnesium oxid and calcium carbonate in quantities sufficient to make and maintain neutrality of the urine. From 20 to 30 gm. of a mixture of such salts is required for this purpose daily. In the more severe cases, magnesium sulphate was added to this list, given in small doses throughout the day in order to maintain a free diuresis. The bowels were kept open for the free secretion of lead by means of saline cathartics. Since none of the cases treated showed any evidence of the development of acute edema, large quantities of water and citrus fruit juices were administered.

No narcotics were used to produce sleep. It cannot be emphasized too much that the use of opium compounds and chloral hydrate in this and in similar types of insomnia is an exceedingly dangerous practice.

THERAPEUTIC RESULTS

It was found that after a thorough alkalization the insomnia decreased in severity, usually disappearing in a few days. The appetite returned almost at once, and with it the subject ceased to lose weight. In several cases general weakness, nervous irritability, as evidenced by tremors and somewhat exaggerated reflexes, together with disturbing dreams, persisted for considerable periods of time. The low blood pressure also tended to persist. However, there was no increase of severity of symptoms, and no relapse into previously severe symptoms in a single case. It is possible, of course, that this resulted largely from cessation of exposure to tetra-ethyl lead, and from the rest and diversion occasioned by light outdoor exercise and recreation. (None of these patients were put to bed for the reason that not one was dangerously ill, and all maintained stoutly that they felt better out of bed.) On the other hand, it is probably not without significance that none of the delayed effects of either ordinary lead poisoning or of this particular type of lead poisoning have appeared in any of these cases. Experimental evidence obtained in the study of these patients is to be made the subject of a later and more detailed paper, but on clinical evidence alone, I feel justified in presenting the foregoing method of treatment as the most satisfactory one that can now be offered. It is my opinion that the beneficial effects of the administration of sodium thiosulphate in arsenic and lead poisoning [4] and potassium iodid in lead poisoning are explainable on the basis of the principles stated above. It seems likely that a greater effect may be obtained from the use of light metal salts, which are borne in much higher concentration than these. The efficacy of these therapeutic methods in the acute maniacal types of tetra-ethyl lead poisoning has not been determined. It is suggestive, however, that in an acute case of inorganic lead poisoning with pronounced cerebral symptoms, such a course of treatment, vigorously carried out, resulted in the permanent disappearance of cerebral manifestations within a period of twelve hours.[5]

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[2] Kehoe, R. A.: The Effects of Heavy Metals upon a Protein and the Reversal of Such Effects, J. Lab. & Clin. Med. **5**: 443 (April) 1920; The Activation of An Enzyme Poisoned by Heavy Metal Salts, ibid. **7**: 736 (Sept.) 1922.

[3] Weiss, H. B.: A Method of Treatment of Mercuric Chlorid Poisoning, J. A. M. A. **68**: 1618 (June 2) 1917; The Principles of Treatment in Mercuric Chlorid Poisoning, J. A. M. A. **71**: 1045 (Sept. 28) 1918; The Treatment of Mercuric Chlorid Poisoning, Arch. Int. Med. **33**: 224 (Feb.) 1924.

[4] Dennie, C. C., and McBride, W. L.: Treatment of Arsphenamin Dermatitis, Mercurial Poisoning and Lead Intoxication, J. A. M. A. **83**: 2082 (Dec. 27) 1924.

[5] McCord, C. P.: Report of Case, *Cincinnati J. Med.* 5: 354 (Sept.) 1924.

Clinical Notes, Suggestions, and New Instruments

A TYPHOID CARRIER

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History.—A farmer, aged 39, of an Oxford County town, Maine, married, having two living children, examined, Feb. 3, 1925, complained of dizziness and headaches, despondency, indigestion, flatulence, nausea and vomiting, pain in the stomach after eating, and weakness of the left arm and leg with paresthesia. Part of the time he was very hoarse; the taste in his mouth was so bad that he chewed tobacco constantly. He had various rheumatic and neuralgic attacks, diagnosed as neuritis, focal infections, nervous exhaustion or spinal subluxation, depending on the diction of his various medical attendants. The family history was negative. As a child he had been well till 10 years of age, when he had typhoid fever. There had been no subsequent illness worthy of memory, though he had always complained of indigestion and flatulence. He lived with his parents on an isolated farm. He had worked at the "Balsams," Dixville Notch, N. H., as chore man and porter from 1904 to 1913 every season; he was never a food handler and he had never associated with illness or had any illness. At the age of 29 he married, and a year after marriage left the farm, living in a nearby village, and having a private water supply and plumbing system. His wife had typhoid fever of a severe type in June, 1919, but lived. Their older child had typhoid fever closely following, and after a long illness recovered. The second child had typhoid in October, 1920, followed by osteomyelitis, operation and death. The father-in-law, who had boarded in the family a week, developed typhoid fever about the same time as the second child, but lived. By this time, the local board of health made an investigation, and a representative of the state board of health was called in, but with negative results. In November, 1922, we were called in consultation to the village in which this man lived to see a patient who proved to have typhoid; and milk, supplied by the man who is the subject of this report, seemed to be the only possible source of the infection.

Examination.—The patient was harrassed, anxious and sick-looking. He was 6 feet, 2 inches (188 cm.) tall and weighed 161 pounds (73 kg.). The blood pressure was 128 systolic and 78 diastolic. The heart and lungs were normal. The urine was alkaline in reaction, clear, and negative to sugar, albumin and casts; the specific gravity was 1.028. A blood test showed: red blood cells, 5,184,000; white blood cells, 5,000; hemoglobin, 95 per cent.; color index, 0.9; polymorphonuclears, 69 per cent.; lymphocytes, 29 per cent.; transitionals, 1 per cent.; mast cells, 0.3 per cent.; large mononuclears, 0.7 per cent.; platelets apparently decreased. The roentgen ray showed a normal stomach, duodenum and intestine entirely to the anus.

There were no gallstones visible. The spine and chest were normal. Stool cultures from a normal movement were positive for *Bacillus typhosus* after forty-eight hours; after calomel and oil, they were positive for *B. typhosus* after slightly less incubation; from watery results following calomel and oil, they yielded a very rapid and luxuriant growth in twenty-four hours. The passage of the Rehfuss tube gave a normal acid content of the stomach; acid bile in several samples, and finally alkaline bile, which rapidly grew *B. typhosus*. The widal reaction was positive with *B. typhosus;* the serum dilution was 1:40. The patient was reported to the state board of health as a carrier. He suffered mental anguish and depression, but consented to any treatment.

A cholecystectomy and an appendectomy were performed, February 22, by Dr. Carl Robinson. The appendix was long, injected and inflamed, but negative to *B. typhosus*. The fundus of the gallbladder was soft and free, dull gray, and somewhat mottled; there were a few filmy adhesions to the transverse mesocolon, easily freed. The gallbladder was removed intact with a clamp on the cystic duct. There was a small stone near the cystic duct. The common and hepatic ducts were normal to palpation. Laboratory examinations were made by Dr. Mortimer Warren. Cultures made from the center of the gallstone, after flame sterilization, grew *B. typhosus*. Cultures of the submucous tissue of the gallbladder after the mucous membrane was seared grew *B. typhosus*.

Ten consecutive stools following the operation were negative, some of which were taken after vigorous catharsis. The patient improved mentally and returned home from the hospital, March 29. At the present date, May 8, he has gained 20 pounds (9 kg.). A culture of the stool was again taken, May 4, and reported negative.

COMMENT

It is a remarkable length of time, twenty-nine years, that this man was a typhoid carrier. It is to be noted, as evidence of his personal neatness and cleanliness, that for nine years he worked in a hotel without knowledge of typhoid resulting. The intimate associations of family life were promptly and dramatically productive of disease. The case is a valuable testimonial to the localization of *B. typhosus* in the gallbladder. It is also made evident by our investigation of submucous tissue in the gallbladder that any treatment short of removal must be futile.

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CAVERNOUS SINUS THROMBOSIS: AN UNUSUAL CASE *

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MADISON, WIS.

Approximately 300 cases of cavernous sinus thrombosis have been reported in the literature.[1] Of these, the great majority have occurred either by metastatic infection from a focus drained by this sinus, or by the extension of a neighboring infectious process. The case here reported gave very little evidence, either direct or presumptive, of an infectious etiology, and for that reason is of sufficient interest to warrant publication.

REPORT OF CASE

F. B., a man, aged 29, single, a store clerk, admitted to the Wisconsin General Hospital, Feb. 14, 1925, had had diabetes since May, 1924, which had been treated by regulation of the diet with fair success. For the past six months his diet had not been carefully controlled, and he had a recurrence of the diabetic symptoms. For two weeks before admission he had not been feeling well, and on February 12 he suddenly noted that the right eye and the right side of his face were swollen and that his nose was "stuffed up." His right eye quickly became blind and did not move with the other, and he lost sensation over the right side of his face.

The patient was quite emaciated and markedly dehydrated. He was slightly drowsy, and the speech was indistinct. The face was asymmetrical by reason of a brawny swelling involving the right eyelids, cheek and side of the nose. The right upper lid was ptosed. The right eyeball showed total ophthalmoplegia, slight exophthalmos and apparently increased lacrimation. The tension of the right globe was slightly diminished. There was chemosis and injection of the conjunctiva, and subconjunctival ecchymosis. The cornea was completely anesthetic. Examination of the fundus revealed marked edema, obscuring all detail except for a few shadowy lines indicating the position of the larger vessels. The left eye was normal except for slight fulness of the retinal veins. There was complete anesthesia and loss of muscular power of the right side of the face and forehead. The right nostril and the right side of the palate were ulcerated, and covered with bloody crusts. On drinking, there was drooling from the right side of the mouth. The heart and lungs were normal. The abdomen was markedly scaphoid. The extremities were much emaciated. The patellar and Achilles jerks were absent. Other tendon reflexes were normal. The blood pressure was

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* From the Department of Clinical Medicine, University of Wisconsin Medical School.

[1] Smith, D.: Arch. Ophth. 47: 482 (Sept.) 1918.

96 systolic and 48 diastolic. The temperature was 99.2, the pulse 98, and the respirations 18.

Laboratory examinations revealed a urine containing sugar + + + +, acetone + + + +, and diacetic acid + +. The blood count was: hemoglobin, 59 per cent.; red cells, 3,200,000; white cells, 10,400; neutrophils, 79 per cent. There was marked anisocytosis of the red cells. The blood Wassermann reaction was negative. The blood sugar was 205 mg.; nonprotein nitrogen, 29 mg.; alkali reserve, 40. The plasma showed a marked lipemia. Roentgen-ray examination of the sinuses showed slight clouding of the sphenoid.

Treatment consisted in supplying fluids to relieve the very marked dehydration, and the administration of glucose and insulin to combat ketosis.

On the following day, February 15, the injection about the right side of the face had changed from an active to a passive one, with definite cyanosis of the right side of the nose and about the right eye. Exophthalmos was slightly more prominent, and the tension of the right globe was somewhat more diminished. Nystagmus was observed in the left eye. The temperature was 98, the pulse 80, and the respirations 20. The leukocyte count was 13,200, with 80.6 per cent. neutrophils.

February 16, the cornea of the right globe had become opaque and lusterless, and a serosanguineous, fetid fluid exuded from the right palpebral fissure. The globe was very soft. In the left eye there was paralysis of the external rectus and edema of the upper lid. The ocular tension was normal, and the pupil reacted sluggishly to light. In the afternoon of the same day there was paralysis of all the extra-ocular muscles, and the pupil was fixed. There was a marked slump in the patient's general condition, and the temperature rose to 101 F., without concomitant rise in pulse or respiration rates.

February 17, the right eye had continued to advance to a condition of phthisis bulbi, with a tension of 4 (Schiötz). It was apparent that the left eye was following the course of the right exactly, showing the signs about three days later than did the right.

February 18, the tension of the right eye was 0 (Schiötz). There was beginning gangrene of the right ala of the nose, the right upper lid at the inner canthus, the right side of the palate, and the lateral wall of the right nostril, including the turbinates. The edema of the face was extending over the right temporal and preauricular regions, and was noted also about the left eye and the left side of the nose. The general condition was worse. The patient was in a stupor from which he could not be aroused, and there were irregular periods of apnea of the Biot type. The temperature ranged from 99 to 100 F.

February 19, there were noted subcutaneous extravasations of blood, with serosanguineous discharge, in both external ear canals. The tension of the left eye was diminished, and the cornea was beginning to become hazy.

February 21, there were signs of involvement of the arms and legs, showing occasional jerky movements on the right and increased reflexes on the left.

February 23, there was complete paralysis of the left arm and leg, with increased reflexes. The gangrene of the right side of the face had advanced and there was a foul purulent discharge from the right eye. The temperature was 96 F., the pulse 60, and the respirations 14.

February 24, there was noted an increase in the depth of the coma, and marked involuntary movements of the extremities, which later in the day disappeared with complete paralysis of all extremities. The temperature gradually rose during the day, together with the pulse and respirations, until in the evening they were 106 F., 166, and 42, respectively. The patient died at 10 p. m. Unfortunately, permission for a necropsy could not be obtained.

COMMENT

In studying the course of this patient, it is quite apparent from the physical findings that the condition commenced with thrombosis of the right cavernous sinus. There was little if any evidence from the temperature, blood count, blood culture or history that this thrombosis was of infectious etiology. To the contrary, the severe diabetic condition, together with marked malnutrition and dehydration, pointed to a primary thrombosis of the sinus, with these factors as etiologic. The progressive course of the involved areas indicated an extension of the thrombotic process to include first the left cavernous sinus and then, probably through the inferior petrosal sinuses, the sigmoid and lateral sinuses.

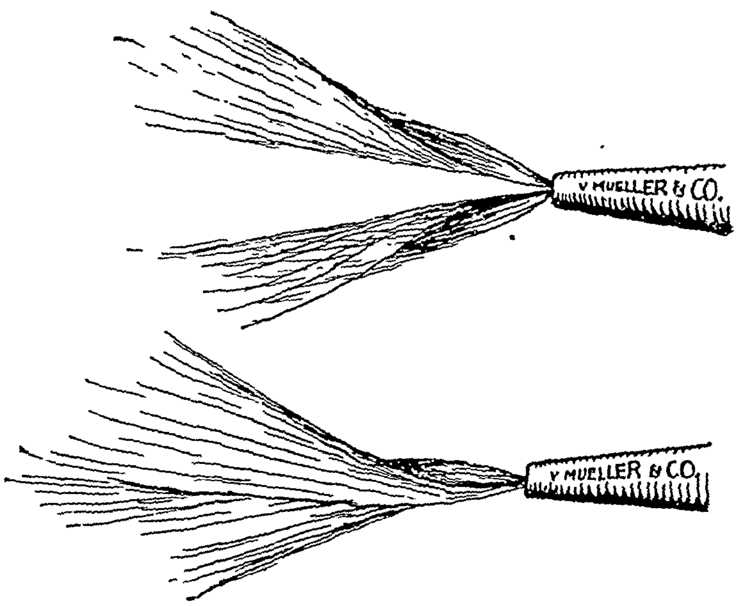
NEW NOZZLES FOR EAR SYRINGE

William W. Goldnamer, M.D., Oakland, Calif.

The stream of water from the nozzles of various ear syringes is not delivered into the external auditory canal to the best advantage.

The old theory is that, the canal being curved, the water will strike a curved portion, be deflected from the prominences to the valleys, get under the foreign substance, and force it out.

This is true when the water strikes right; but the canal is so irregular in many of its dimensions and varies so much at different ages and under so many different conditions (especially if the canal is misshapen with long impactions of cerumen), that the stream of water must be directed at many different angles before we can remove cerumen or other foreign matter.



Nozzles for ear syringe.

The surprising deviations of the external auditory canal are most strikingly illustrated by an observation of the contours of fusible metal casts of this canal. Therefore, I felt that if the stream is given a twist, or a centrifugal motion, as it leaves the spout of the syringe, it will not only accomplish the result better and save a great deal of time, but will appeal to physicians, especially those specializing in otology. The centrifugal twist is not so great that it will interfere materially with the force of the stream leaving the nozzle point.

The instrument house, in trying to carry out my idea of a stream of water that would show this twist, wrought two nozzles, either of which is excellent. If anything, the divided stream is the better.

577 Fourteenth Street.

Public Cooperation with County Health Department.—When a campaign for a health department is started in a county, the county authorities should be apprised of the plan. It is desirable for some local organization to initiate the campaign and to request assistance, if needed, from the state health department in creating favorable sentiment. Occasionally, county authorities are found who are convinced of the inherent soundness of the plan and are willing to appropriate funds without waiting for an expression of public sentiment. In such cases it is still important to inform the people of the county fully as to the functions of the health department so that public cooperation, which is essential to success, may be had by the health officer.—*Parran, Thomas, Jr.: Pub. Health Rep.* **40**:984 (May 15) 1925.

Special Article

REPORT OF COMMITTEE ON COMPENSATION FOR EYE INJURIES[*]

The Committee on Compensation for Eye Injuries was appointed by the Section on Ophthalmology of the American Medical Association in 1919. It has submitted several reports. These have been accepted but not adopted, as more time was deemed necessary for further research. Herewith we submit a final report based on the results of our investigations, both experimental and clinical.

SCOPE

The aim of the committee is to establish a method of determining the loss of visual efficiency of a person who has suffered any degree of impairment of vision as the result of occupational disease, or injury. Such loss is to be the basis on which the amount of compensation shall be determined.

SECTION I. COMPENSATION BASED ON THE VISUAL EFFICIENCY OF THE INDIVIDUAL

Compensation for loss of vision should be that proportional part of the compensation provided by law for total permanent disability which expresses the percentage loss of visual efficiency of the individual in pursuing a gainful occupation.

Total permanent disability of both eyes is identical with total permanent disability of the individual.

It will be noted that this method of determining compensation makes unnecessary the separate provisions for computing compensation for disability of one eye and for disability of both eyes.

At present the compensation laws of most states contain provisions that base awards on disability of one eye only, and some statutes provide separate schedules for one eye and for both eyes. In the interest of uniformity, definiteness and justice, it is urged that compensation statutes be so changed that awards for ocular disability shall be based on the percentage of permanent disability only.

SECTION II. THREE PRIMARY AND COORDINATE FACTORS OF VISION

There are three elements of vision, each of which has an interdependent and coordinate relation to full visual efficiency. These coordinate factors are (*a*) acuteness of vision (central visual acuity); (*b*) field of vision, and (*c*) muscle function. Although these factors do not possess an equal degree of importance, no act of vision is perfect without the coordinate action of all.

Other functions, though secondary and dependent, are recognized as important, such as depth perception, stereoscopic vision, fusion sense, color perception, adaptation to light and dark, and accommodation. These functions are inherently dependent on the status of the three coordinating functions of vision, and they also depend on central nervous function.

SECTION III. MAXIMUM AND MINIMUM LIMITS OF THE PRIMARY COORDINATE FACTORS OF VISION

In order to determine the various degrees of visual efficiency, (A) normal or maximum, and (B) minimum limits for each coordinate function must be established; i. e., the 100 per cent. point and the 0 per cent. point.

A. *Maximum Limits.*—The maximum efficiency for each of these is established by existing and accepted standards.

(*a*) Central Visual Acuity: The ability to recognize letters or characters which subtend an angle of 5 minutes, each unit part of which subtends a 1 minute angle, is accepted as standard. Therefore, a 20/20 Snellen is employed as the maximum acuity of central vision, or 100 per cent. acuity.

(*b*) Field Vision: A visual field having an area which extends from the point of fixation outward 65 degrees, down and out 65 degrees, down 55 degrees, down and in 45 degrees, inward 45 degrees, in and up 45 degrees, upward 45 degrees, and up and out 55 degrees is accepted as 100 per cent. industrial visual field efficiency.

(*c*) Muscle Function: A maximum normal muscle function is present when there is absence of diplopia in all parts of the field of binocular fixation.

B. *Minimum Limits.*—The minimum limit, or the 0 per cent. of the coordinate functions of vision, is established at that degree of deficiency which reduces vision to a state of uselessness.

(*a*) Central Visual Acuity: The minimum limit of this function is established as the loss of light perception, light perception being *qualitative* vision. The practical minimum limit of *quantitative* visual acuity is established as the ability to distinguish form. Experience, experiment and authoritative opinion show 20/200 Snellen as 80 per cent. loss of visual efficiency, 20/380 as 96 per cent. loss, and 20/800 as 99.9 per cent. loss. Table 1 and Chart 1 show the percentage loss of visual efficiency corresponding to the Snellen notations for distant and for near vision, for the measurable range of quantitative visual acuity.

(*b*) Field Vision: The minimum limit for this function is established as a concentric central contraction of the visual field to 5 degrees. This degree of contraction of the visual field reduces the visual efficiency to zero.

(*c*) Muscle Function: The minimum limit for this function is established by the presence of diplopia in all parts of the motor field. This condition constitutes zero visual efficiency.

SECTION IV. MEASUREMENT OF COORDINATE FACTORS AND THE COMPUTATION OF THEIR PARTIAL LOSS

A. *Central Visual Acuity.*—Visual acuity shall be measured both for distance and for near, using the Snellen notation, each eye being measured separately. Central visual acuity for distance shall be measured at a test distance of 20 feet. Central visual acuity for near shall be measured at a test distance of 14 inches.

The quantity that determines the visual acuity efficiency of one eye shall be the result of the weighted values assigned to these two measurements for distance and for near. A onefold value is given to the former and a twofold value to the latter. Thus, if the visual efficiency for near is 40 per cent. and the visual efficiency for distance is 70 per cent., the central visual acuity efficiency for the eye in question would be:

$$\frac{(40 \times 2) + (70 \times 1)}{3} = \frac{80 + 70}{3} = \frac{150}{3} = 50,$$

or a 50 per cent. visual acuity efficiency.

The best central visual acuity obtainable *with correcting glasses* shall be used in determining the degree of visual efficiency.

If there exists a difference of more than 4 diopters of spherical correction between the two eyes, the best possible vision of the injured eye without glasses or with lenses of not more than 4 diopters spherical difference from the fellow eye shall be the acuity on which subsequent rating is to be computed for this injured eye.

The Snellen test letters or characters as published by the committee and designated "Industrial Vision Test Charts" subtend a 5 minute angle, and their component parts a 1 minute angle. These test letters are to be used at an examining distance of 20 feet for distant vision and 14 inches for near vision from the patient. The illumination is to be not less than three foot candles, nor more than ten foot candles on the surface of the chart.

Table 1 and Chart 1 show the visual acuity and the percentage of loss of efficiency, both for distance and for near, for partial loss between 100 per cent. and zero vision for one eye.

B. *Field Vision.*—The extent of the field of vision shall be determined by the use of the usual perimetric test methods, a white target being employed which subtends a 1 degree angle under illumination of not less than three foot candles, and the result plotted on the industrial visual field chart.

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[*] Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

Table 1.—*Percentage Loss of Visual Efficiency Corresponding to Snellen Notations for Distant and for Near Vision for Measurable Range of Quantitative Visual Acuity*

Snellen Notation for Distance	Snellen Notation for Near	Percentage of Visual Efficiency	Percentage Loss of Vision
20/20	14/14	100.0	0.0
20/25	14/17.5	95.7	4.3
20/30	14/21	91.5	8.5
20/35	14/24.5	87.5	12.5
20/40	14/28	83.6	16.4
20/45	14/31.5	80.0	20.0
20/50	14/35	76.5	23.5
20/60	14/42	69.9	30.1
20/70	14/49	64.0	36.0
20/80	14/56	58.5	41.5
20/90	14/63	53.4	46.6
20/100	14/70	48.9	51.1
20/120	14/84	40.9	59.1
20/140	14/98	34.2	65.8
20/160	14/112	28.6	71.4
20/180	14/126	23.9	76.1
20/200	14/140	20.0	80.0
20/220	14/154	16.7	83.3
20/240	14/168	14.0	86.0
20/260	14/182	11.7	88.3
20/280	14/196	9.7	90.3
20/300	14/210	8.2	91.8
20/320	14/224	6.8	93.2
20/340	14/238	5.7	94.3
20/360	14/252	4.8	95.2
20/380	14/266	4.0	96.0
20/400	14/280	3.3	96.7
20/450	14/315	2.1	97.9
20/500	14/350	1.4	98.6
20/600	14/420	0.6	99.4
20/700	14/490	0.3	99.7
20/800	14/560	0.1	99.9

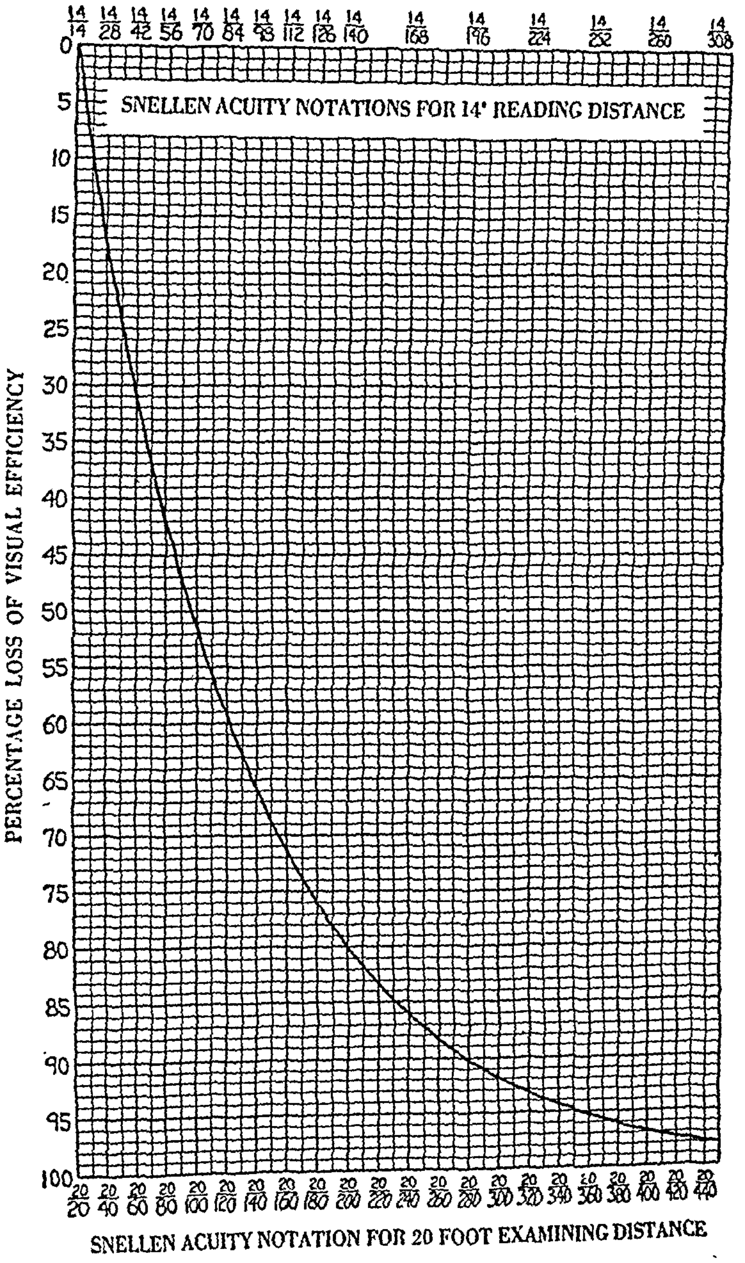

Chart 1.—Percentage loss of visual *efficiency corresponding* to the Snellen notations for distant and for near vision, for the measurable range of quantitative visual acuity.

The amount of radial contraction in the eight principal meridians shall be determined. The sum of these eight, divided by 420 (the sum of the eight *principal radii of the* industrial visual field) will give the *visual field efficiency of one eye in per cent.*

C. *Muscle Function.—Muscle function shall be measured in* all parts of the motor field, recognized methods being used for testing.

Diplopia may involve the field of binocular fixation entirely or partially. When diplopia is present, this shall be platted on the industrial motor field chart. This chart is divided into twenty rectangles, 4 by 5 degrees in size. The partial loss to muscle function due to diplopia is that proportional area which shows diplopia as indicated on the platted chart compared with the entire motor field area (Table 2 and Chart 4).

Table 2.—*Loss in Muscle Function*

No loss	equals	100%	Motor	Field	Efficiency
1/20	"	98%	"	"	"
2/20	"	95%	"	"	"
3/20	"	92%	"	"	"
4/20	"	89%	"	"	"
5/20	"	87%	"	"	"
6/20	"	84%	"	"	"
7/20	"	81%	"	"	"
8/20	"	77%	"	"	"
9/20	"	74%	"	"	"
10/20	"	71%	"	"	"
11/20	"	67%	"	"	"
12/20	"	63%	"	"	"
13/20	"	59%	"	"	"
14/20	"	55%	"	"	"
15/20	"	50%	"	"	"
16/20	"	45%	"	"	"
17/20	"	39%	"	"	"
18/20	"	32%	"	"	"
19/20	"	22%	"	"	"
20/20	"	0%	"	"	"

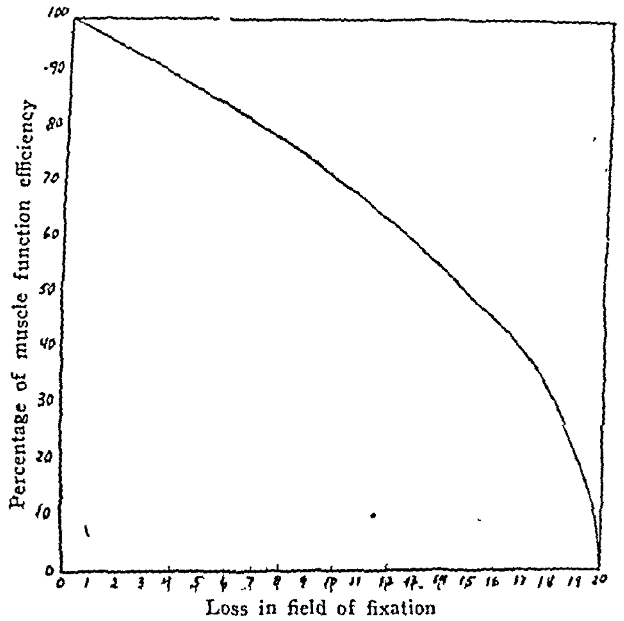

Chart 2.—Curve for loss of efficiency in diplopia.

When diplopia involves the entire motor field, causing an irremediable diplopia, the loss in coordinate visual efficiency is equal to the loss of use of one eye; and when the diplopia is partial, the loss in visual efficiency shall be proportional and based on the efficiency factor value of one eye.

SECTION V. INDUSTRIAL VISUAL EFFICIENCY OF ONE EYE

The industrial visual efficiency of one eye is determined by obtaining the product of the computed coordinate efficiency values of central visual acuity, of field vision, and of muscle function. Thus, if central visual acuity efficiency is 40 per cent., visual field efficiency is 81 per cent. and the muscle function efficiency is 100 per cent., the resultant visual efficiency of the eye will be $0.40 \times 0.81 \times 1.00 = 32.4$ per cent. Should diplopia be present in part of the motor field so that the motor efficiency is reduced 50 per cent., the visual efficiency would be $0.40 \times 0.81 \times 0.50 = 16.2$ per cent.

SECTION VI. INDUSTRIAL VISUAL EFFICIENCY OF THE INDIVIDUAL

It is a fact well established by common experience that the visual efficiency of the individual is by no means reduced to one half (50 per cent.) by the complete loss of one eye, vision in the fellow eye remaining normal. Hence the necessity for a weighted average. The researches of the committee show that a weighing factor of 3 applied to the more efficient eye gives an efficiency rating of the individual in substantial agreement with the consensus of technical judgment, such judgment being based on actual reproduction, comparison and relative evalution of various specific conditions of visual efficiency.

The industrial efficiency of the individual is computed as follows: To the percentage figure which has been determined as the industrial visual efficiency of the *less* efficient of the two eyes, three times the percentage figure that has been determined similarly for the *more* efficient eye is added, and the result is divided by 4. The quotient will be the percentage figure that expresses the *industrial visual efficiency of the individual.* Thus, if the individual efficiency rating of the injured eye is 40 per cent. and that of the fellow eye is 100 per cent., the visual efficiency of the individual will be found by the following formula:

$$\frac{(40 \times 1) + (100 \times 3)}{4} = \frac{340}{4} = 85 \text{ per cent.}$$

Individual industrial efficiency, and compensation should be 15 per cent. of the amount awarded for total permanent disability.

SECTION VII. TYPES OF OCULAR INJURY NOT INCLUDED IN THE DISTURBANCE OF THE COORDINATE FACTORS

Certain types of ocular disturbance are not included in the foregoing computations and these may result in disabilities, the value of which cannot be computed by any scale as yet scientifically possible of deduction. Such are disturbances of accommodation, of color vision, of adaptation to light and dark, metamorphopsia, entropion, ectropion, lagophthalmos, epiphora, and muscle disturbances not included under diplopia. For such disabilities additional compensation shall be awarded, but in no case shall such additional award make the total compensation for loss in industrial visual efficiency greater than that provided by law for total permanent disability.

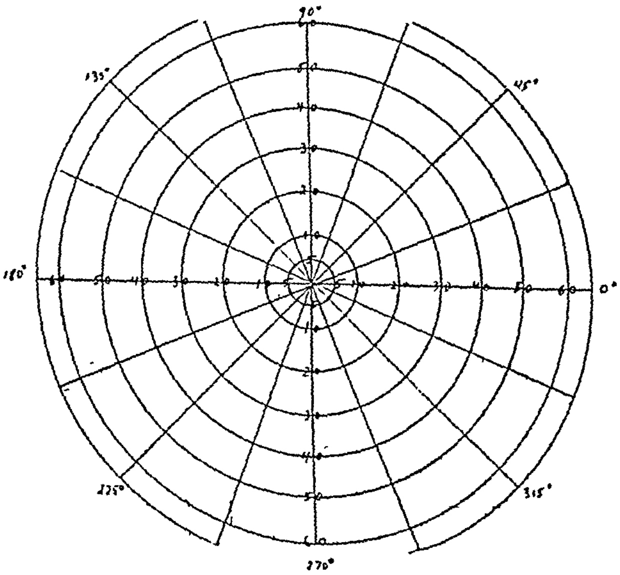

Chart 3.—Industrial visual field chart.

Compensation for loss in industrial visual efficiency, as provided for above, does not include compensation for any cosmetic defect, for mental or physical suffering, for cost of medical attention, or for time lost from gainful occupation during the period of treatment previous to final computation of compensation as provided for below. Additional compensation should be awarded for the various losses here enumerated when not specifically provided for by statute.

SECTION VIII. REGULATIONS FOR COMPUTING COMPENSATION

Compensation shall not be computed until all adequate and reasonable operations and treatment known to medical science have been attempted to correct the defect. Further, before there shall be made the final examination on which compensation is to be computed, at least three months shall have elapsed after the last trace of visible inflammation has disappeared, except in cases of disturbance of extrinsic ocular muscles, optic nerve atrophy, sympathetic ophthalmia, and traumatic cataract; in such cases, at least twelve months and preferably not more than sixteen months shall intervene before the examination shall be made on which final compensation is to be computed.

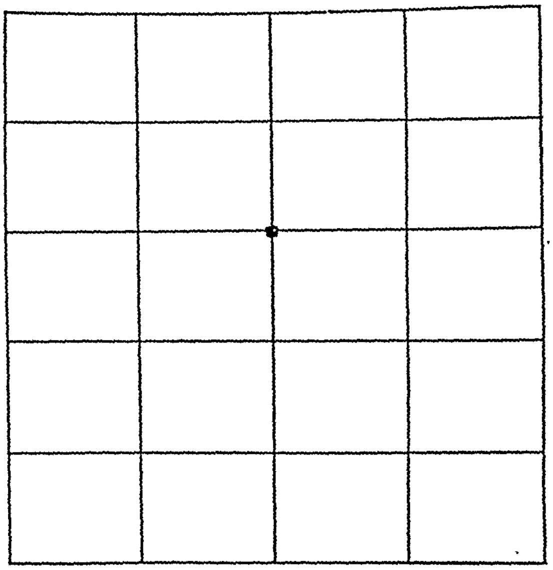

Chart 4.—Industrial motor field chart.

In cases of additional loss in visual efficiency, when it is known that there was present a preexisting subnormal vision, compensation shall be based on the loss incurred as a result of eye injury or occupational condition specifically responsible for the additional loss. In case there exists no record or no adequate and positive evidence of preexisting subnormal vision, it shall be assumed that the visual efficiency prior to any injury was 100 per cent.

Nelson M. Black.
Albert C. Snell.
James Patton.
Harry S. Gradle.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

W. A. Puckner, Secretary.

EXTRACT OF MALT (See New and Nonofficial Remedies, 1925, p. 209).

Loeflund's Malt Extract.—A preparation essentially similar to extract of malt, U. S. P.

Actions and Uses.—See Extract of Malt (New and Nonofficial Remedies, 1925, p. 209). Marketed as Loeflund's malt extract with calcium and Loeflund's malt extract with cod liver oil.

Manufactured by Ed. Loeflund & Co., G. m. b. H., Grunbach-Stuttgart (Germany) (Britt, Loeffler & Weil, New York distributor). No U. S. patent or trademark.

Loeflund's Malt Extract with Calcium: Calcium lactophosphate, 0.5 per cent., in Loeflund's malt extract.

Loeflund's Malt Extract with Cod Liver Oil: Norwegian cod liver oil, 33 per cent.; Loeflund's malt extract, 67 per cent.

THE JOURNAL OF THE
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SATURDAY, JULY 11, 1925

THE PRODUCTION OF CONGENITAL AND HEREDITARY MALFORMATIONS THROUGH IRRADIATION

The old conception of Lamarck that variation, and in consequence evolution, was the direct result of environmental agencies, or the use or disuse of physiologic function, rested on the assumption that such changes were inheritable. A few items of evidence interpreted by some as supporting this hypothesis have been produced. However, after many years of negative results by experimental methods, and the accumulation of observational evidence indicating that structural changes induced in somatic tissues of the parents do not result in the production of offspring with similar or related abnormalities, lamarckism seems to have become an almost obsolete issue.[1] This generally accepted attitude was not fundamentally altered even when, in 1918, Guyer and Smith[2] reported that by injecting pregnant rabbits with antiserum made by immunizing fowls with rabbit crystalline lens, offspring were obtained with eye defects that were transmissible to subsequent generations. Here, apparently, a substance in the maternal blood had produced such changes in the germ plasm of the offspring that it became a character transmitted through heredity after the manner of a mendelian recessive; but the hereditary alteration does not depend on changes in the somatic tissues, in accordance with the lamarckian hypothesis. There has also been evidence that other, less specific, agents might so alter the germ plasm that a permanent alteration results and manifests itself in the form of inherited abnormalities. Alcohol, with its known toxicity for the germ cells, has seemed to have such effects both in man and in experimental animals. Irradiation, which so markedly attacks germ cells as well as embryonic cells and cells in active division, has long been known to lead to arrest of development or deformation of offspring when applied at certain stages of embryonic development, as well as to produce sterility when acting in adequate doses on the germ cells of either sex.[3]

In due time it was found that these injuries to the germ cells may, in some cases at least, lead to abnormalities that are transmitted to later generations as an inherited character. At first the useful fruit fly *Drosophila* furnished evidence of this sort, abnormal offspring being produced which continued to breed abnormal offspring. More striking results have been obtained by Bagg and Little,[4] who submitted to the roentgen ray healthy mice of known ancestry, which through many generations of inbreeding had produced no known abnormal offspring. They confirmed the observations of others, that irradiation of animals before mating may cause them to produce abnormal offspring, but much more important is the observation that when the offspring of irradiated mice are bred together, there may appear abnormalities in subsequent generations which, by properly selected breeding, may involve all the offspring. These defects are inherited as mendelian recessives, this being the usual rule with detrimental qualities; e. g., the tendency to cancer, according to the observations of Maud Slye. That the most conspicuous abnormalities have involved the eyes raises the question whether the inheritable eye defects obtained by Guyer and Smith with antilens serum depend on the immunologic specificity of the serum for the eye or resulted merely from a general principle that the factors in the germ plasm determining formation of the eyes are especially readily injured by harmful agents. However, these mice of Bagg and Little often showed other deformities, especially of the ears and feet, clubbing being sometimes marked. Subcutaneous extravasations of blood were often found in embryos and mice with deformities, and these authors suggest that the primary change is an abnormal development or defect of the blood vascular system in the embryos, leading to the local arrest or abnormality of development.

With all these evidences that exposure of parental germ cells to irradiation may lead not only to sterility but also to the formation of defective offspring comes now the possibility that the product of irradiated germ cells may be capable of transmitting deformities to future generations. This must give thought to all those who have the responsibility of giving treatment by irradiation. Little and Bagg[5] have already given warning of the danger of using radium or roentgen rays on persons who are likely to become parents, because of the possibility that defective offspring may result. Nevertheless, despite the admitted potential danger, so far the instances of actual fetal deformity that have resulted from irradiation of women previous to conception seem not to have been numerous. Schmitt[6] has collected reports of 130 pregnancies following irradiation, thirty-six of which terminated in early abortions, largely attributed to uterine myomas or carcinoma. Of eighty-one children born at term, seventy-six survived, and three of these showed developmental defects, certainly not an alarming proportion. However, seven of the other children were somewhat defective in their later development, but none seem to have shown eye defects. It would seem, therefore, that on the basis of existing returns the actual danger of developmental defects from irradiation of child-bearing women is not so great as to constitute a contraindication to this form of therapy for conditions in which it is seriously needed, but the potential danger is real enough to discourage irradiation when the indications for its use are not urgent or when the prospects of actual benefit are at all doubtful.[7]

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[1] A full review on the inheritance of acquired characters is given by Detlefsen, J. A.: The Inheritance of Acquired Characters, Physiol. Rev. **5**: 244 (April) 1925.

[2] Guyer, M. F., and Smith, E. A.: Studies on Cytolysins, J. Exper. Zool. **26**: 65, 1918; **31**: 171, 1920.

[3] Bailey, Harold; and Bagg, H. J.: Am. J. Obst. & Gynec. **5**: 461 (May) 1923.

[4] Bagg, H. J., and Little, C. C.: Am. J. Anat. **33**: 119 (March) 1924.

[5] Little, C. C., and Bagg, H. J.: Am. J. Roentgenol. **10**: 975 (Dec.) 1923.

THE FUNCTION OF THE ENDOTHELIAL CELLS IN TUBERCULOSIS

The possibility that tubercle bacilli that have found lodgment in tuberculous foci in the body may become liberated into tissue spaces and lymphatic channels, and thus become disseminated widely, has long been recognized. A more extensive mode of distribution is afforded by a chance liberation directly into the blood stream. The commoner tendency, however, is for the micro-organisms to remain localized through the production of tubercles in connection with endothelial structures. The extensive phagocytic power of endothelial cells under a large variety of conditions is only gradually being appreciated. Until quite recently, phagocytosis was supposed to be a far more restricted function of cells and one exercised by decidedly fewer varieties of them than current evidence seems to indicate. Sabin[8] has pointed out that phagocytosis is a general property of cells to which an almost bewildering number of names have already been applied. Among them is a type of endothelial cell that reacts phagocytically to particulate foreign substances, to lipoid materials, and to a wide range of foreign bodies in the tissues. Permar[9] has recently pointed out that in aseptic inflammatory reactions the endothelial cell appears quite early and has a definite importance, because of its phagocytic activity toward the débris of cells and fibrin in the injured area. In infected injuries the early exudate contains some endothelial cells, but the polymorphonuclear leukocytes soon predominate. It is only when the acute reaction is subsiding that the endothelial cell again appears. In the later stages of the reaction it is quite prominent, as its phagocytic activities are essential to the progress of healing.

It appears that the tubercle bacillus also provokes the intervention of these active cells produced by the vascular endothelium. According to the investigations of Foot,[10] tubercles found in the lung, liver, spleen, kidney, lymph nodes, omentum, brain and meninges are composed chiefly of cells originating in the local capillary vascular endothelium. In the lesions of the central nervous system, the evidence indicates that a definite proportion of cells going to make up tubercles is to be traced to the endothelial leukocytes of the blood stream. The endothelium of the liver, bone marrow and lung is most active in producing these phagocytes.

The endothelial cells referred to do not necessarily remain fixed but may become detached and give rise to traveling cells of phagocytic propensities. Apparently in the adult as well as the embryo, endothelium keeps giving off the so-called clasmatocytes—cells highly specialized toward phagocytosis—in certain areas and can be made to do so by certain stimuli. According to Permar, the tubercle bacillus has thus been carried into the tissues from the finer air passages and alveoli by endothelial cells, in the same way that these cells carry particulate substances. Whether intracellular transportation also accounts for primary invasion of the intestinal tract is not certain, though it offers an explanation for the invasion of an intact mucosa. The endothelial cell may be responsible for the actual introduction of the micro-organisms into new tissues. Thus we have a contrast between dissemination of tubercle bacilli by intracellular and humoral distribution, respectively. As Permar summarizes the consequences, a knowledge of the various phases of endothelial cell reactions is essential to a comprehension of the anatomic tubercle and of the conglomerate tubercle. It is evident, he adds, that the endothelial reaction leading to localization of the tubercle bacillus is complicated by the fact that the endothelial cell also wanders for considerable distances in the tissues. Thus, intracellular transfer offers an explanation not only for the primary invasion of the micro-organism and the local spread to form the conglomerate tubercle, but also for the development of distant secondary foci, such as those in regional lymph nodes. Even bacilli in the blood stream or serous fluids presumably cannot long remain free, since not only wandering but also fixed endothelium is phagocytic for the tubercle bacillus.

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[6] Schmitt, Walther: Strahlenbehandlung und Nachkommenschaft, Klin. Wchnschr. 3:1358 (July 22) 1924.

[7] Pemberton, F. A.: Childbearing After Radium and X-Ray Treatment, Surg., Gynec. & Obst. 39:207 (Aug.) 1924.

[8] Sabin, F. R.: The Origin of the Cells of the Blood, Physiol. Rev. 2:38 (Jan.) 1922.

[9] Permar, H. H.: The Function of the Endothelial Cell in Pathological Conditions, Especially in Tuberculosis, Am. Rev. Tuberc. 9:507 (Aug.) 1924.

[10] Foot, N. C.: Studies on Endothelial Reactions, I, The Macrophages of the Loose Connective Tissue, J. M. Res. 40:354 (March 27) 1919; II, The Endothelial Cell in Experimental Tuberculosis, J. Exper. Med. 32:513 (Nov.) 1920; III, The Endothelium in Experimental Pulmonary Tuberculosis, ibid. p. 533; IV, The Endothelium in Exper- imental General Miliary Tuberculosis in Rabbits, ibid. 33:271 (Feb.) 1921; V, The Endothelium in the Healing of Aseptic Wounds in the Omentum of Rabbits, ibid. 34:625 (Dec.) 1921; VI, The Endothe- lial Response in Experimental Tuberculous Meningo-Encephalitis, ibid. 36:607 (Dec.) 1922.

THE PARATHYROID HORMONE—RETROSPECT AND PROSPECT

The significance of a hormone, elaborated by the parathyroid structures, for the metabolism of calcium, at least so far as the regulation of the content of this element in the blood is concerned, seems to be well established.[1] Measured by contrast with what has happened in most domains of scientific endeavor, progress in this field of study has been rapid as well as helpful. Only thirty-five years has elapsed since Sandstrom clearly identified the parathyroid tissue as an independent glandular structure, after it had long been regarded as a sort of "accessory thyroid."[2] Less than twenty years has intervened since it was intimated that calcium salts have a palliative effect on the tetany following ablation of the parathyroid glands; and not until 1913 was it clearly established by direct analysis that the blood in tetany has a lowered content of calcium. Meanwhile, various investigators in different places have interested themselves in the search for effective ways of securing prompt "regulation" of the calcium content of the blood in those conditions in which an upset in this factor may become responsible for pathologic consequences, among which tetany is an outstanding symptom.

It is not surprising, in view of the known facts, that attention should have been directed toward the discovery of some parathyroid component—a hormone—that might be concerned in the regulation of calcium metabolism through a specific control of blood calcium concentration. In the somewhat analogous case of the pancreatic hormone involved in the normal metabolism of sugar in the body there were numerous attempts to isolate the antidiabetic agent, attempts based on intelligent consideration of the demonstrated facts of the pathology of diabetes and the physiology of sugar utilization, before success in the separation of insulin was attained. As Macleod[3] has recently stated, there could be little doubt as to the existence of insulin in the pancreas; the problem—and for practical reasons a most important one—was to devise means for extracting it in a condition suitable for continued administration to diabetic patients. The brilliant success of Banting, Best, Collip and Macleod in solving the difficulties four years ago was in part built on the labors of a host of predecessors, among whom some also seemed to have the solution of the problem well in hand when the preparation of an effective insulin was announced.

Similarly, the promise of preparing an effective parathyroid product seems about to be fulfilled in various places. The studies of Collip[4] in Canada have attracted widespread attention in accord with their inherent merits.[1] They should not cause us to lose sight of the early attempts of Hanson[5] in this country to prepare an active extract of the parathyroid glands of animals. Collip himself has designated Hanson's work as "worthy of great commendation" and his clinical results as "indeed highly suggestive." Hanson has prepared an acid extract of bovine parathyroid, yielding his "hydrochloric X," which contains the agent that induces a raising of the calcium content of the blood in hypocalcemia and thereby can relieve tetany. Success has also attended the efforts of Fisher and Larson[6] at the University of Illinois College of Medicine. The most profound changes in response to the injection of potent parathyroid extracts noted by them were increases in viscosity, phosphates, calcium and nonprotein nitrogen of the blood. Like Collip, the Chicago investigators warn against the possible dangers of unwarranted therapy with the potent preparations, for symptoms of atonia, depression, diarrhea and dyspnea are readily induced by large doses of this extract.

Current Comment

THE QUANTITATIVE ACCURACY OF MEDICINAL TABLETS

The Journal, with the aid of the A. M. A. Chemical Laboratory, has called attention repeatedly to discrepancies between the actual composition and the claims made for various tablets and pills sold to the medical profession. Reports have been published of comprehensive investigations by L. F. Kebler, the Connecticut Agricultural Experiment Station, and the New Hampshire State Board of Health. These reports revealed the existence of a deplorable condition, since variations as high as 54 per cent. above and 70 per cent. below the label statements of composition were found. In two thirds of the tablets examined by the Connecticut Agricultural Experiment Station, the variation was greater than 10 per cent. Over a year ago G. W. Hoover, in charge of the drug control laboratories of the Bureau of Chemistry, Department of Agriculture, addressed one of the drug manufacturing associations concerning the findings of the government after wide survey of medicinal tablets, following which the two leading manufacturers' associations[7] voluntarily appointed a joint committee, known as the contact committee, to collaborate with the officials of the Bureau of Chemistry. During the past year this group has given a great deal of attention to the subject of hypodermic tablets. Physicians will welcome, therefore, a recent announcement of plans for controlling the degree of accuracy of hypodermic tablets, issued by the federal Bureau of Chemistry, in which is given the maximal permissible variations, ranging from 7.5 to 9 per cent., as suggested by the contact committee. The next study of this group will be on compressed tablets and tablet triturates. The fact that the pharmaceutical industry thus voluntarily collaborates with the government authorities in the establishment of standards is encouraging. Equally encouraging is the fact that the smaller firms, particularly most of those selling to dispensing physicians, are recognizing the necessity of employing not merely standard drugs and mechanical care in preparation, but actual chemical control. As THE JOURNAL has insisted for years, every firm engaged in selling drugs to physicians should have a competent scientific staff; this is one good step in that direction.

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[1] The Parathyroid Hormone, editorial, J. A. M. A. **84:** 1499 (May 16) 1925.

[2] A recent review of the literature has been published by Boothby, W. M.: Endocrinology **5:** 403 (July) 1921.

[3] Macleod, J. J. R.: Insulin, Medicine **3:** 195 (Aug.) 1924.

[4] Collip, J. B.: The Extraction of a Parathyroid Hormone Which Will Prevent or Control Parathyroid Tetany and Which Regulates the Level of Blood Calcium, J. Biol. Chem. **63:** 395 (March) 1925.

[5] Hanson, A. M.: An Elementary Chemical Study of the Parathyroid Glands of Cattle, Mil. Surgeon **52:** 280 (March) 1923; Notes on the Hydrochloric X of the Bovine Parathyroid, ibid. **52:** 434 (April) 1923; The Hydrochloric X of the Bovine Parathyroid and Its Phosphotungstic Acid Precipitate, ibid. **54:** 76 (Jan.) 1924; The Hydrochloric X Sicca: A Parathyroid Preparation for Intramuscular Injection, ibid. **54:** 218 (Feb.) 1924; Parathyroid Preparations, ibid. **54:** 554 (May) 1924; Experiments with Active Preparations of Parathyroid Other Than That of the Desiccated Gland, ibid. **55:** 701 (Dec.) 1924; The Hormone of the Parathyroid Gland—Changes in the Blood Serum Calcium of Thyroparathyroidectomized Dogs Modified by the Bovine Hydrochloric X, Minnesota Med. **8:** 283 (May) 1925; The Hormone of the Parathyroid Gland, Proc. Soc. Exper. Biol. & Med. **22:** 560 (May) 1925.

[6] Fisher, N. F., and Larson, E.: Experiments with Extracts of Parathyroid Glands, Proc. Soc. Exper. Biol. & Med. **22:** 447 (May) 1925.

[7] The American Drug Manufacturers Association and the American Pharmaceutical Manufacturers Association.

DUST DANGERS

Dirt has been defined as "matter out of place," and dust belongs in a similar category. It is the quality or character of these substances, as well as their abnormal location, that renders them respectively more or less objectionable; for we are beginning to realize that dusts are by no means alike in their harmful propensities. In the earlier years of the development of the modern science of bacteriology, the dangers of dusts were conceived of as residing in their content of viable bacteria that could be distributed by any chance gust of wind. Today, much consideration is being devoted to dusts as carriers of allergic substances. These may be pollens of grasses responsible for a large variety of distressing maladies, such as hay-fever or rose-cold; or they may represent epidermal detritus of animals, derivatives of the skin, hairs and feathers, which may serve to bring to the susceptible symptoms of asthma and of eczema, as well as of the perennial rhinitis. Nor is this all. There are also dusts associated with special industries and employments: stone dusts, coal dust, iron and steel dust, which are known to produce harm if they gain entrance in undue amount into the respiratory organs. The type of pneumonokoniosis that may be developed seems to depend on the factory, grinding shed, quarry or mine that is involved. Accordingly, there are the well known distinctions between anthracosis, siderosis and silicosis, for example. The relation of tuberculosis to dusts in the lungs has been much debated. Irrespective of the kind of mineral dust inhaled, sooner or later the same structural changes in the lungs are developed; namely, an increase in fibroconnective tissue or fibrosis. The proof of a direct connection between pulmonary tuberculosis and occupations leading to inhalation of dusts has often been attempted, but the arguments are not convincing. Landis[1] of the Henry Phipps Institute at the University of Pennsylvania has recently presented striking evidence that organic dust, in distinction from the particles of mineral origin, does not produce the condition known as pneumonokoniosis. His conclusion is based on necropsies made on persons employed in the textile industries in which vegetable fibers "hang like a cloud" in the workrooms. This does not mean that organic dusts cannot give rise to allergic phenomena or act as carriers of bacteria; but the incrimination of dust per se must hereafter be more specific. Inorganic dust can and does produce serious and disabling damage to the lungs. Other dusts need not be equally or at least similarly detrimental to health.

THE MENACE OF HYDROGEN SULPHID

The mention of hydrogen sulphid, or sulphuretted hydrogen, brings memories of student days and of smells that were associated with disgust rather than danger. Yet this gas is in reality something more significant than a mere laboratory novelty to medical practice, for it occasionally becomes a menace in the industrial world. The miner recognizes hydrogen sulphid as "stink damp," and knows that it can become explosive when mixed with air in certain proportions. The same gas may annoy men entering sewers, or workmen active in a variety of industrial plants in which chemical processes are carried out on a large scale. Under these circumstances it joins the ranks of the volatile poisons such as hydrocyanic acid and arsin. Fortunately, the sulphid readily betrays itself by its disagreeable odor, though it should be noted that the sense of smell is not a reliable indicator for the concentration of the gas in the air. Thanks largely to the studies of Haggard[1] at Yale University, the outstanding facts about the toxicology of hydrogen sulphid are now available. They correct the commonly taught doctrine that the gas combines with the respiratory blood pigment hemoglobin under the usual conditions of intoxication. The formation of sulphemoglobinemia during life is limited to the rare condition in which the blood pigment is first entirely reduced. Hydrogen sulphid is readily oxidized to harmless or relatively nontoxic substances in the body. This is of enormous advantage in preventing cumulative or delayed effects. The outstanding features in acutely fatal cases are simply those of asphyxia. The heart may continue to beat after respiratory failure induced by the gas; consequently, resuscitation through prompt institution of suitable artificial respiration becomes a welcome possibility. Hydrogen sulphid is, strictly speaking, an irritant gas, so that delicate tissues exposed to it may suffer. The irritant action is not limited to the respiratory tract but may also be exerted on the eyes. Hence, prophylaxis suggests the wearing of goggles as well as suitable masks where the contamination of air with hydrogen sulphid cannot be kept at a low level by means of ventilation. Prolonged inhalation of a concentration of the gas even as low as 100 parts per million (0.01 per cent.) is reputed to induce symptoms of chronic intoxication. Fortunately, exposures of this sort are rarely attained outside the laboratory.

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[1] Landis, H. M.: The Relation of Organic Dust to Pneumonokoniosis, J. Indust. Hyg. 7:1 (Jan.) 1925.

[1] Haggard, H. W.: The Toxicology of Hydrogen Sulphide, J. Indust. Hyg. 7:113 (March) 1925.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Hospital News.—The name of the Arizona Hospital and Sanatorium, Tucson, has been changed to the Tucson Hospital by the directors of the Tucson Hospital Association, which recently took over the operation of the hospital.

CALIFORNIA

Personal.—Col. Edward L. Munson, U. S. Army, chief surgeon ninth corps area, San Francisco, was guest of honor at a dinner, recently given by officers of the medical reserve corps and other Spokane physicians at the Spokane City Club. ——Dr. Walter M. Dickie has been reappointed to the state board of health. Dr. Dickie has served as secretary and executive officer of the board since 1920.

John Scott Barker Loses Appeal.—"Dr." John Scott Barker, owner of so-called "dope" sanatoriums in Los Angeles and Oakland, lost his appeal in the circuit court of appeals, June 15, and must serve five years in prison for violation of the Harrison Narcotic Law. Barker was arrested on a charge of violating the Harrison Narcotic Law in 1923 in Oakland.

Faculty Changes at Stanford University School of Medicine.—The dean of Stanford University School of Medicine, San Francisco, announces the following changes in the faculty for the year 1925-1926.

Dr. Rufus L. Rigdon has been retired as emeritus professor of genito-urinary surgery and appointed consultant in urology at Lane Hospital.

The following appointments have been made:

Dr. Ernest C. Dickson, professor of medicine, has been appointed acting executive of the department of public health and preventive medicine.

Dr. John F. Cowan, clinical professor of surgery.

Dr. Frank R. Girard, lecturer in surgery.

Dr. Clarence O. Sappington, lecturer in industrial hygiene.

Dr. James R. Dillon, associate clinical professor of surgery (genito-urinary) and acting head of the division of genito-urinary surgery.

Dr. Emile F. Holman, Western Reserve University, associate professor of surgery.

Dr. Philip H. Pierson, associate clinical professor of medicine (tuberculosis).

Dr. Harry A. Wyckoff, assistant professor of medicine.

Dr. Jay M. Read, assistant clinical professor of medicine.

Dr. Lloyd B. Dickey, instructor in medicine (pediatrics).

Dr. Robert F. Kile. instructor in medicine (radiology).

Dr. C. Frederic Fluhmann, instructor in obstetrics and gynecology.

Drs. Aime N. Fregeau, Merlin T. R. Maynard, Alfred A. Robinson, Lorenz J. Schermerhorn, Roland P. Seitz, Edward F. Stadtherr and Ernest K. Stratton, clinical instructors in medicine.

Drs. Albert V. Pettit and Hans von Geldern, clinical instructors in obstetrics and gynecology.

Drs. Otis A. Sharpe and Loren R. Chandler, clinical instructors in surgery.

DISTRICT OF COLUMBIA

Personal.—Dr. Warren P. Morrill, formerly superintendent of the Shreveport Charity Hospital, Shreveport, La., has been appointed superintendent of the Columbia Hospital for Women, Washington.——Brig. Gen. James D. Glennan, assistant surgeon general of the army, recently received a silver star citation for gallantry in action against Sioux Indians in 1890.——Miss Lucy Minnigerode has been selected by the International Red Cross Committee as the American recipient of the Florence Nightingale medal. During the World War, Miss Minnigerode was a member of the Red Cross unit assigned to Kiev, Russia, and later became director of the nurse corps of the U. S. Public Health Service. She is chairman of the Delano Memorial Committee and a representative of the American Nursing Association on the Joint Congressional Committee.

FLORIDA

Dr. Smith President of State Board.—Dr. Henry Mason Smith, Tampa, was appointed president of the state board of health by the governor, June 20, to succeed Dr. Calvin T. Young of Plant City, whose commission recently expired. The other members of the board are Dr. William D. Nobles, Pensacola and Charles H. Mann, Jacksonville.

GEORGIA

Society News.—The twenty-fifth annual meeting of the Chattahoochee Valley Medical and Surgical Association will be held at Warm Springs, July 14-15. There are fifty-three papers on the program. The annual dance of the association will be Tuesday evening and there will be an executive session of the association preceding adjournment, Wednesday afternoon.

HAWAII

Physician to Leper Colony Pensioned.—Dr. William J. A. Goodhue, for twenty-five years resident physician at the leper settlement on Molokai Island, was retired, June 30, on a pension. It is reported that at that time a successor to Dr. Goodhue had not been obtained.

ILLINOIS

Chiropractor Guilty.—Hamilton Mabie, a chiropractor of Belleville, was found guilty by a jury in the county court, June 24, on a charge of practicing without a license. Mabie's defense was that he started practicing before the 1923 law requiring chiropractors to be licensed was passed.

Personal.—Dr. Warner H. Newcomb, for several years health officer of Suffolk, Va., has been appointed health officer for Morgan County and also superintendent of Oak Lawn Sanatorium. Dr. Newcomb is a native of Illinois.——Stephen A. Forbes, LL.D., has been reappointed director of the Outlook Tuberculosis Sanitarium, Urbana.——Dr. Charles E. Shultz, Shirley, has been appointed city health director for Bloomington to succeed Dr. Harold B. Wood, resigned.

New Milk Laws.—A law becomes effective, September 1, which requires all milk pasteurizing plants, except those concerned exclusively with markets in cities of 500,000 or more people, to secure a certificate of approval from the state department of health. The certificates can be issued only after an inspection of the plant by a sanitarian, and milk dealers who do not employ the standard pasteurizing process will be prohibited from advertising their products as pasteurized.——Another new law relating to milk provides, among other things relating to tuberculin testing, that municipalities may prohibit the sale of milk from any herds that have not been tuberculin tested.

Supreme Court Affirms Conviction of Chiropractor.—In a decision, June 20, the Illinois Supreme Court upheld the constitutionality of the Medical Practice Act of 1923 and affirmed the $300 fine of Chiropractor Max W. Walder, Danville, for practicing without a license. The contention of the defense was, it is reported, that chiropractic is a useful and harmless practice which cannot be regulated by the state. The court said that a method of treating human ailments cannot be both useful and harmless, for if it is sufficiently efficacious to be useful, it is at the same time capable of producing harmful results when practiced without care or skill. This is said to be the first case of a chiropractor disbarred from practice without a license which has been brought to the attention of the supreme court of Illinois.

Chicago

Hospital News.—The Baptists of Chicago are making plans to purchase the Metropole Hotel at Michigan Boulevard and Twenty-Third Street, to be converted into a hospital.

Farewell Banquet to Dr. Lewis.—About 200 physicians gave a banquet at the Drake Hotel, June 23, to Dr. Dean Lewis, who will leave in the near future for Baltimore, where he has accepted the chair of surgery at Johns Hopkins University Medical School. Dr. James B. Herrick was toastmaster; among the speakers were Dr. Gotthelf Carl Huber, University of Michigan Medical School, Ann Arbor, Amos Alonzo Stagg, University of Chicago, and Drs. Allen B. Kanavel, Vernon C. David and George F. Dick.

INDIANA

Personal.—Dr. Thomas E. Courtney has been appointed to complete the unexpired term on the board of health of Indianapolis of Dr. William H. Foreman, resigned.

Dr. Spickermon Sentenced.—Dr. Harry R. Spickermon, Muncie, pleaded guilty, it is reported, to violation of the Harrison Narcotic Law, June 20, and was sentenced to two years in the federal penitentiary at Leavenworth, Kan., and fined $250 and costs. The prosecution brought out evidence in the trial, it is said, to the effect that Dr. Spickermon had helped conceal the bandit Gerald Chapman when the latter was in Muncie, and that it was Spickermon's house that Chapman was leaving when he was captured.

Funds Available for Medical School.—The board of trustees of Indiana University, at a meeting, June 25, made available sums totaling $700,000 for improvements in the medical school and a university library. The funds to be used for the medical school were derived from a gift of $375,000 from William E. Coleman, Indianapolis, a gift of $6,000 from the Eli Lilly Company of Indianapolis, and from the sale to the state of the building formerly used by the medical college, for $100,000. Mr. Coleman's gift for the erection of a woman's hospital in Indianapolis will be under the direct supervision of the medical college. The Lilly gift of $6,000 is for special research work in surgery, and the $100,000 derived from the sale of the old building will go into the general sinking fund of the University Medical College.

IOWA

Personal.—Dr. George H. Scanlon has been appointed city health physician for Iowa City to succeed Dr. Theodore L. Hazard.

Medical Arts Building.—The construction of a seven story building at Burlington, costing about $300,000, to be devoted to physicians and dentists' offices, will be completed early next spring. Dr. Amos J. Thornber is president and H. L. Madison, D.D.S., vice president, of the company.

Society News.—Dr. Don M. Griswold, associate professor of preventive medicine and hygiene, State University of Iowa College of Medicine, addressed the Dubuque County Medical Society, Dubuque, June 16, on "The Private Practice of Preventive Medicine"; Dr. John L. Tierney, professor of internal medicine, St. Louis University School of Medicine, St. Louis, on "Endocrinology"; Dr. Fred M. Smith, professor of internal medicine, State University of Iowa College of Medicine, on "Cardiac Diseases"; Dr. Nathaniel G. Alcock, professor of genito-urinary surgery State University of Iowa College of Medicine, on "Treatment of Early Syphilis," and Dr. Howard L. Beye, professor of surgery, State University of Iowa College of Medicine, on "Analysis of One Hundred Cases of Empyema."

KENTUCKY

Fund to Care for Crippled Children.—The Kentucky Society for Crippled Children is conducting a drive to raise $100,000 for the care of crippled children within the next year. The state legislature appropriated $10,000 for the work of the society which became available, July 1 Nine clinics in various sections of the state have been held this summer and there will be three more. It is reported that 115 children examined at these clinics have been placed in hospitals for treatment.

MARYLAND

Personal.—Dr. William S. Love, Jr., a member of the staff of the University Hospital, has received an appointment as assistant in medicine in the Lewis Clinic at the University Hospital School, London. Dr. Love will leave for England in September, his appointment being effective for one year from October 1.

Branch Tuberculosis Association Formed.—The Frederick County Branch of the Maryland Tuberculosis Association was formed at a special meeting and luncheon held at the Francis Scott Key Hotel, Frederick, May 4. The new organization will function throughout the year, supporting the Tuberculosis Clinics, the Modern Health Crusade, and other activities of the campaign against tuberculosis.

Public Health Meeting Held in Cumberland.—A community public health meeting, the first of its kind, was held in Cumberland, June 28. In an open-air auditorium, about 5,000 people heard the lecture with the aid of amplifiers. Dr. Joseph C. Bloodgood, Baltimore, spoke on "Cancer: A Preventable and Curable Disease." A concert by the municipal band preceded the address.

State Laboratory Facilities.—The state department of health has extended its facilities until it is possible for every physician to have the assistance of the laboratory in the treatment of his cases. Containers for specimens are supplied physicians, and the reports of examinations in urgent cases are made by long distance telephone. There is a central laboratory at the state department of health offices in Baltimore, and branch laboratories at Cumberland, Hagerstown and Frederick for counties along the northern border; at Hurlock for the eastern shore counties, and a recently opened branch at the Hygienic Laboratory in Washington for counties in southern Maryland. No charge is made to physicians for services in any of these laboratories.

MASSACHUSETTS

Personal.—Dr. Ralph M. Chambers has been appointed superintendent of Taunton State Hospital to succeed Dr. Ransom A. Greene, who has been transferred.

Dr. Calderwood Resigns.—Dr. Samuel H. Calderwood, for thirty years a member of the state board of registration in medicine, has submitted his resignation to the governor. Dr. Calderwood has acted as chairman of the board for several years.

MICHIGAN

Chiropractor Fined.—A chiropractor of Constantine by the name of Walter Huber was fined $100 and costs in circuit court at Centreville, June 5, it is reported, following a plea of guilty to a charge of practicing medicine without a license.

President of University Appointed.—Clarence C. Little, LL.D., since 1922 president of the University of Maine, has been elected president of the University of Michigan, Ann Arbor. Dr. Little is a graduate of Harvard; in 1917-1918 he was associate in comparative pathology at Harvard Medical School, and research associate from 1919 to 1922. He was assistant director of the station for experimental evolution of the Carnegie Institution, Washington, D. C., previous to his appointment as president of the University of Maine.

Diphtheria Prevention.—Although toxin-antitoxin has been provided free of charge by the state for the last two years, few immunizations have been done. There were 471 deaths from diphtheria last year in Michigan and more than 6,000 cases. The state department of health now urges county medical societies and health authorities to cooperate with practicing physicians and commissioners of schools to eradicate diphtheria by means of immunization by toxin-antitoxin. Local authorities have conducted immunization campaigns in twenty counties, and the state department of health cooperating with local organizations in four.

MISSOURI

Personal.—The honorary degree of D.Sc. was conferred on Dr. Willard Bartlett, St. Louis, by his alma mater, Illinois College, June 10.——Dr. Thomas A. Kyner, Kansas City, has been appointed superintendent of the General Hospital to succeed Dr. John M. Frankenburger, resigned, because of ill health.——Governor Baker has reappointed Dr. Cortez F. Enloe, Jefferson City, director of the board of penal institutions, for a term ending June 19, 1929.

Promotions at St. Louis University.—Dr. William W. Graves, for a number of years chairman of the department of neurology at the St. Louis University School of Medicine, has been appointed director of the department; Drs. Louis Rassieur and Max W. Myer have been advanced from the rank of associate professors of surgery to professors of surgery; Dr. Charles F. Sherwin from instructor in surgery to assistant professor of surgery, and Dr. Harvey D. Lamb from instructor in ophthalmology to assistant professor of ophthalmology.

NEW JERSEY

State Medical Election.—At the annual meeting of the New Jersey State Medical Society, Atlantic City, June 17, Dr. Lucius F. Donohoe, Bayonne, was elected president; Drs. James S. Green, Elizabeth, Walter P. Conaway, Atlantic City, and Ephraim R. Mulford, Burlington, vice presidents; Dr. Elias J. Marsh, Paterson, treasurer; Dr. John Bennett Morrison, Newark, recording secretary, and Dr. William J. Carrington, Atlantic City, corresponding secretary.

Two Lepers in Newark Public School.—Hale and Frank George, 11 and 13 years old, pupils of the Avon Avenue public school in Newark, have been found to be suffering from leprosy, it is reported, and have been isolated pending action by the federal government. The parents came from Bermuda six years ago. There is no evidence of leprosy in other members of the family. Following a conference of teachers at the school, the superintendent and the commissioner of health of Newark, the equipment of the school, comprising books, manual training articles, pencils, etc., valued at $2,000, were burned. About 1,500 pupils attend the school.

NEW YORK

Alumni News.—The Alumni Association of the Long Island College Hospital, Brooklyn, held its annual meeting, June 2. Dr. Augustus D. Harris was elected president; Dr. John B. D'Albora, vice president, and Dr. Joseph Raphael, secretary. A permanent committee was organized to administer the John C. Cardwell research fund, which will be used for research work in the laboratory department of the college.

Purchase of Lincoln Hospital.—The committee of the whole of the board of estimate has authorized the purchase of Lincoln Hospital, Bronx, for $750,000. The board took this action rather than incur a greater expense in building a city hospital in that district. The trustees of Lincoln Hospital recently announced that it was unable to meet running expenses, and unless taken over by the city would have to close.

Personal.—Dr. Henri F. Mace, Walton, has been appointed assistant medical inspector for rural schools of the state department of education, to succeed Dr. Willard T. Rivenburgh, resigned.——Dr. Elmer E. Larkin resigned from the state board of parole, effective July 1. He has accepted the position of physician at Dannemora Prison.——The Rockefeller Foundation has awarded fellowships to Drs. Manuel Balado, Mayo Foundation, Rochester, Minn., and J. T. Lewis of the Physiology Institute, attending Harvard University. Both physicians are from Argentina.

Report of Counsel for State Society.—George W. Whiteside, counsel for the Medical Society of the State of New York, reported to the house of delegates at the recent annual session that 181 suits were instituted between March, 1924, and April, 1925, of which 129 had been disposed of, seven settled, ninety-two dismissed, discontinued or tried (verdict for defendant), and thirty marked off the active list as dormant cases; in none was there a verdict for the plaintiff. Mr. Whiteside personally attended or was represented at each meeting of the council and executive committee during the year.

Staten Island Mental Health Survey.—A mental health survey of 3,000 Staten Island school children, made by the National Committee for Mental Hygiene, revealed that there were marked physical, mental and social handicaps; that a large number of the children need mental hygiene service; that the facilities for treating mental health problems are few, and that there is what seems to be "a thyroid district" dependent on the local water supply. Of the children examined, only 40.3 per cent. were shown to have average intelligence and, excluding the continuation and vocational schools, 3.6 per cent. of them were feebleminded, 9.2 per cent. were of borderline intelligence, 16.8 per cent. belonged to the dullard group, 43.6 per cent. were of average intelligence and 26.1 per cent. were of superior intelligence. In the continuation and vocational schools, a much larger percentage were mentally subnormal.

New York City

Fund for Indigent Women.—Mrs. Job E. Hedges, together with friends of her late husband, has established a fund to be known as the Job E. Hedges Memorial Fund at the New York Post-Graduate Hospital for the relief of indigent women who require hospital care. It will be under the direction of Dr. Walter T. Dannreuther.

Bellevue Hospital to Be Modernized.—Of the additional $3,250,000 appropriated by the board of estimate, June 16, to modernize Bellevue Hospital, $3,000,000 will be expended for a new building for outpatient clinics which will furnish facilities for 1,500 patients a day. The Municipal Lodging House on East Twenty-Fifth Street will be rebuilt and used to quarter the psychopathic ward.

Women Physicians' Meeting.—The Institute Fraternity, a national organization of women physicians, held its twenty-first annual meeting, June 23, at the Biltmore Hotel, under the presidency of Dr. Cornelia Chase Brandt. Dr. Mary E. Hanks, founder and treasurer of the loan fund used to aid women who desire medical education, stated that five young women are now being educated for the practice of medicine by the loan fund, which amounts to about $10,000.

New Laboratory at Kings County Hospital.—The board of estimate appropriated $500,000, July 1, for a new laboratory at the Kings County Hospital in Flatbush. The proposed laboratory is regarded as the first step in a broad medical educational plan for Brooklyn in connection with the Long Island Medical College. Among those who appeared before the board in behalf of the appropriation were Bird S. Coler of the department of public welfare; Dr. John E. Jennings, president, Kings County Medical Society; Dr. John O. Polak, professor of obstetrics and gynecology, Long Island Medical College, and Dr. Joseph Tenopyr, chief surgeon at the Kings County Hospital.

Hospital News.—Property acquired by the Williamsburgh Hospital on South Ninth Street for the proposed site of a new hospital and nurses' school has been sold for $80,000. Cost of construction made the project inadvisable.——The Public Health Station on Coney Island boardwalk was opened for the summer season, June 22, and the other stations maintained at Rockaway Beach and South Beach were opened, July 3.——St. Elizabeth's Hospital, on West Fifty-First, will erect a group of hospital buildings at Fort Washington Avenue and One Hundred Ninetieth Street on eleven lots.——Frederick D. Green, general secretary of the United Hospital Fund for the last fifteen years, has retired.——The Children's Aid Society formally opened its new convalescent home for boys at Valhalla, June 27. Fifty boys who have been receiving treatment in New York hospitals will be installed at the home. The home is the gift of Dunlevy Milbank and includes a 63 acre farm and a modern building large enough to accommodate 500 boys a year. It is equipped with sun parlors and sleeping porches.

Changes in Staff of Rockefeller Institute.—The board of scientific directors of the Rockefeller Institute for Medical Research announces, among others, the following appointments: Members: Winthrop J. V. Osterhout, Ph.D., and Dr. Florence R. Sabin. Assistants: Drs. Charles A. Doan, Philip Finkle, Charles H. Hitchcock, Philip Levine, Richmond L. Moore, Ralph S. Muckenfuss, and Richard E. Shope. Drs. David Davidson and Philip Reichert have been promoted from fellows to associates. The following, hitherto connected with the institute, have accepted appointments as indicated after their names: Dr. Stuart Mudd, assistant professor of experimental pathology, Medical School of the University of Pennsylvania, and associate in pathology, Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis; Dr. Christopher H. Andrews, assistant to Prof. Francis R. Fraser, Medical Unit, St. Bartholomew's Hospital, London, England; Dr. Douglas Boyd, Jr., assistant resident in surgery at Lakeside Hospital, Western Reserve University, Cleveland; Dr. Robert Elman, assistant in surgery, department of surgery, Washington University Medical School, St. Louis; Dr. Joseph H. B. Grant, house officer in pediatrics, Johns Hopkins Hospital; Dr. Charles Philip Miller, Jr., assistant professor of medicine, Graduate School of Medicine, University of Chicago; Dr. Waro Nakahara, associate pathologist, Government Institute for Infectious Diseases, Tokyo Imperial University, Japan, and research associate, Institute of Physical and Chemical Research of Tokyo; Dr. David T. Smith, pathologist, New York State Hospital for Incipient Tuberculosis, Ray Brook, N. Y.; Dr. Elmer L. Straub, Jr., assistant resident pathologist, University of Louisville, Ky.; Dr. Chester M. Van Allen, assistant professor of surgery, Graduate School of Medicine, University of Chicago.

NORTH CAROLINA

Hospital News.—Mr. B. N. Duke has donated $15,000 to construct a ward of ten beds for crippled negro children at the North Carolina State Orthopedic Hospital, Gastonia. Construction will begin shortly.——The Maria Parham Hospital was opened at Henderson, July 2, receiving ten patients that day. It will be conducted by members of the local medical profession as a general hospital.

State Board Reappointments. — Governor MacLean announces the reappointment to succeed themselves as members of the state board of health, for terms of six years, Dr. Richard H. Lewis, Raleigh, and E. J. Tucker, D.D.S., Roxboro. Dr. Lewis' original appointment was in 1884, since which time he has been continuously a member of the board and secretary from 1892 to 1909. Dr. Tucker was appointed six years ago.

Narcotic Violations.—In the federal court at Durham, last week, the following physicians were found guilty of violating the Harrison Narcotic Law and fined: Dr. Edwin H. Bowling, $500; Dr. Needham P. Boddie, $250; Dr. Ira J. Stoner, $250; Dr. William A. Strowd, $250. A mistrial resulted in the case of Dr. Elmar S. Waring, and a new trial at Elizabeth City was ordered by the court. The members of the state board of medical examiners in session at Raleigh attended the hearings.

Commission to Determine Duty to Feebleminded.—Following the resignations of Drs. Charles B. McNairy and William A. Newbold of the State School for Feeble-Minded, Kinston (The Journal, July 4, p. 44), the governor announces that he will shortly name a special commission headed by Dr. Watson S. Rankin, formerly secretary, state board of health, to determine the proper scope and character of the work the state should undertake relative to its feebleminded. The other members of the commission will include physicians and laymen.

OHIO

Committee on Public Education.—The house of delegates of the Ohio State Medical Association unanimously adopted at Columbus a resolution empowering council to appoint, or to act as, a committee on public education.

Typhoid Due to Wells.—Eighteen cases of typhoid in Bellefontaine were reported, June 30, to have been traced to two roadside wells near that city which had been found polluted. Sixteen of these cases were said to be in boy scouts who had drunk water from these wells while hiking.

Health Officers' Meeting.—Dr. Harry F. Rapp, Portsmouth, was elected president of the Ohio Public Health Association at the recent annual meeting, Columbus. Resolutions were adopted at this meeting opposing the establishment of a separate board of examiners for chiropractors, and another one favoring the restoration of the appointment of the state director of health by the public health council.

The Chiropractic Initiative Proposition.—As the proposal now stands, submitting to the people of Ohio at the November election the question of a separate licensing board for chiropractors is opposed by all earnest public health groups and by the Licensed Chiropractor Society of Ohio as well. The *Ohio State Medical Journal* says that the provisions of the proposal would permit the so-called "National Board of Chiropractic Examiners, a paper organization," sponsored by the Palmer School of Chiropractic, to grant licenses by reciprocity; that is, this particular school would be able to set the standards for chiropractors in Ohio. The initiative bill was rejected by the general assembly, February 26, and a supplementary petition filed with the secretary of state, May 29, two days after the expiration of the ninety day period provided by the constitution of the state. If voted on favorably in November by the people, this proposal would admit chiropractors to all the privileges of physicians, destroy the value of vital statistics, abolish the single board of licensure and allow the state to be overrun by a horde of cultists.

OKLAHOMA

Hospital News.—A new $50,000 building for the American Hospital at Picher is being constructed. Dr. E. Albert Aisenstadt is the chief surgeon and owner.——The Hayden-Carroll Private Hospital at Tulsa was recently opened; Dr. Elmer Forrest Hayden is in charge.

Opinion on Use of Passes.—Following a request for an opinion, the attorney general advised, June 19, that, among others, members of the state board of medical examiners may continue to ride on railroads on passes if they are in part payment for services rendered as a matter of private business. There is a constitutional provision that prohibits state officers from riding on free passes.

OREGON

Society News.—Dr. Wilson R. Adams, Medford, was elected president at the thirty-fourth annual meeting of the Southern Oregon Medical Association, Grants Pass, recently, and Dr. William W. P. Holt, Medford, secretary-treasurer.

University Offers Hospital Site.—The University of Oregon Medical School, Portland, has offered a 15 acre tract on Marquam Hill to the federal government as a site for the Veterans' Bureau hospital. Government officials and representatives of civic and official organizations of Portland recently inspected the site, which is in proximity to the County Hospital, the Doernbecher Hospital and the medical school. The last Congress appropriated $1,350,000 for a Veterans' Hospital.

PENNSYLVANIA

Society News.—Dr. Samuel Calvin Smith, Philadelphia, addressed the Luzerne County Medical Society at the regular May meeting on "Examination of the Heart."——Dr. Grover W. Wende, professor of dermatology and syphilology, University of Buffalo School of Medicine, Buffalo, gave an illustrative lecture before the Westmoreland County Medical Society, Greensburg, recently on "The Differential Diagnosis of Syphilis and the Common Skin Diseases."——Dr. Franklin A. Stevens, Jr., New York, addressed the Northampton County Medical Society, Easton, on the "Etiology, Prevention and Treatment of Scarlet Fever."

Philadelphia

Personal.—Dr. Hubley R. Owen, chief police surgeon, has been granted a leave of absence to make a study of the police retirement systems in Paris and London.

Milk Law Violations.—Fourteen restaurant proprietors have been fined $25 and costs by Magistrate Beaton for violating the law which requires that milk be served to restaurant patrons in the original container.

Health Lecturers.—The Philadelphia Health Department has organized a corps of health lecturers which includes Dr. Charles J. Hatfield, Dr. Ward Brinton, Dr. Henry R. M. Landis, Dr. James M. Anders and Dr. John D. McLean.

Baby Clinic.—A baby clinic, sponsored by members of the Community Mothers' Council of Olney, was opened, July 2, at the Morrison School, Third and Duncannon Avenue. It will be open each Thursday. Dr. Harry W. Goos is in charge.

SOUTH CAROLINA

Personal.—Dr. Thomas Grange Simons, professor of materia medica in the Medical College of the State of South Carolina, received the degree of Doctor of Laws from the College of Charleston at its recent commencement.——Dr. Francis N. Andrews has been elected county health officer for Marion County to succeed Dr. Wallace L. Poole, who goes to Gaffney to take up similar work.——The governor has appointed Drs. Frank M. Lander, Williamston, and Joseph T. Taylor, Adams Run, as members of the state board of medical examiners.

TENNESSEE

Trustees Approve Building Plans.—The trustees of the University of Tennessee approved, June 24, the contract for the first of a series of buildings for the medical college to be erected in Memphis. This building, which will cost about $350,000, will be the first step in the expansion program of the medical school made possible by recent legislation, and will house the departments of anatomy, chemistry and physiology. The site for the structure is on Monroe Avenue south of Eve Hall.

TEXAS

Society News.—Arthur Black, D.D.S., dean, Northwestern University Dental School Chicago, addressed a joint meeting of the El Paso County Medical Society and the Southwestern Dental Association, recently, on "Mouth Infections in Relation to General Health."——Dr. Benjamin H. Orndoff addressed the Harris County Medical Society, May 9, on "The Diagnosis and Significance of the Pathologic Appendix."——The Tarrant County Medical Society, Fort Worth, May 19, considered two sets of plans for a Medical Arts Building for that city and adopted the recommendations of the building committee, authorizing the committee to contract with a company they recommended for the construction of the Medical Arts Building at Tenth and Cherry streets. The society also adopted a motion disapproving the reckless speeding of ambulances in the city.

The Publicity Campaign.—In the report of the Council on Legislation and Public Instruction to the House of Delegates of the state association, the council said that its most important duty was to launch the publicity and educational campaign which had been under discussion for several years and which was unanimously ordered by the House of Delegates the year before. A speakers' bureau was organized and an itinerary prepared covering the principal centers of the state. The speakers were assigned to localities beyond their sphere of professional influence as far as possible, and no speaker was sent to a community without the consent and agreement of the county society holding jurisdiction. A standard outline of a public health address was prepared by the council and illustrative items were furnished. The speakers were allowed almost unlimited latitude, the only fixed requirement being a discussion of the underlying principles of the practice of medicine, the fairness of the medical practice act and the necessity of its enforcement from the standpoint of the public. The fixed purpose of the address was to show the public the value of scientific medicine over the pseudoscientific variety. An advertising agency was employed to plan newspaper publicity, the advertisements being carefully revised by the council. According to incomplete reports, 35,000 people were spoken to directly during the campaign and many times that number reached by newspaper advertising. Of the total of more than $16,000 expended on the campaign, the board of trustees appropriated about $7,000 from the general fund. The newspaper advertising campaign cost $5,608.36; the overhead, excluding that part of the general office expenses made necessary by the campaign, amounted to about $9,500; the traveling expense of speakers amounted to about $600. The board of trustees, in its report, said "that from whatever angle the endeavor is viewed, it was an economic and financial success. . . . We feel that both the medical profession and the public have been given an insight into the relative values of medical service that will redound to the benefit of all concerned, and that as time goes on it will be more evident to the casual observer that both the medical profession and the dependent public will be greatly benefited by a mutual and complete understanding such as this campaign will eventually produce."

VIRGINIA

Society News.—At the recent semiannual meeting of the Piedmont Medical Society, Charlottesville, Dr. Wylie C. Mason, Gordonsville, was elected president; Drs. Frank C. McCue, Charlottesville, and Thomas E. Patteson, Ransons, vice presidents, and Dr. Lewis Holladay, Orange, secretary-treasurer.——Dr. Halstead S. Hedges, Charlottesville, was elected president of the Virginia Society of Otolaryngology and Ophthalmology; Dr. Clifton M. Miller, Richmond, vice president, and Dr. Emanuel U. Wallerstein, Richmond, secretary-treasurer.

The John Horsley Memorial Prize.—Dr. John Shelton Horsley, Richmond, has established a prize at the University of Virginia to be awarded every two years for a thesis on some subject in general surgery. It amounts to two years' interest on $10,000 in 5 per cent. bonds, or about $1,000. The object of the prize is to stimulate interest in the scientific aspects of surgery, particularly the underlying biologic principles. The prize will be awarded biennially at the commencement exercises of the university by a committee consisting of the dean and the professors of surgery, pathology, physiology, biochemistry, and histology and embryology. All graduates of the medical department of the University of Virginia of not more than fifteen years' standing are eligible. Theses should be addressed to the dean not later than February 1 of the year in which the prize will be awarded. The first award will be in June, 1927.

WISCONSIN

Smallpox Quarantine Removed. — The quarantine order issued by the state board of health, May 22, barring unvaccinated persons from coming to or going from certain districts in Milwaukee, has been rescinded by the board. It is reported that the campaign for vaccination in Milwaukee has brought the smallpox epidemic to an end.

Personal.—Dr. John J. Seelman, Milwaukee, has been appointed a member of the state board of health to fill the unexpired term of Dr. Edward S. Hayes, Eau Claire, resigned.——Marquette University, Milwaukee, conferred the honorary degree of doctor of science in hospital administration on Dr. Malcolm T. MacEachern, Chicago, and Dr. Sigismund S. Goldwater, New York, at the recent commencement.——Dr. Edith Haigh-Stevens, Madison, has been appointed to succeed Dr. George H. Ripley, deceased, as a member of the state board of medical examiners.——Dr. John M. Dodd received the honorary degree of doctor of science recently from Northland College, Ashland.

Governor Kills Sterilization Bill. — Governor Blaine announced, June 27, that he had vetoed the bill which would have given the board of control power to sterilize mentally afflicted persons on their discharge from state institutions. The bill, it is reported, would have required every person discharged from an institution for the insane and feeble- minded to be subjected to examination; if it was determined after a hearing that public welfare would be benefited by sterilization of the individual, the operation would be ordered even though the patient and relatives protested. The governor considered that this measure would cause people to hesitate to enter state institutions, that the knowledge of an impending operation on discharge would counteract any treatment they might receive, that it would cause feeble-minded or insane patients, who were financially able, to seek treatment in private hospitals, and that wealthy persons would thus escape sterilization while the poor would be subjected to it.

CANADA

Personal.—Dr. Thomas S. Cullen, Johns Hopkins Hospital, Baltimore, addressed the clinic luncheon at the Western Hospital, Toronto, May 1.——Dr. Joseph A. Bell has been appointed health officer of Sarnia.

Hospital News.—The Lake Edward Sanatorium, located about 100 miles north of Quebec in the Laurentian Mountains, has awarded a contract for a new wing, which will cost $117,000. Whereas the institution has a capacity for sixty tuberculous patients, with the new wing the capacity will be increased by seventy. Dr. J. A. Couillard has been director of the sanatorium for twelve years.

Dr. McCrae Receives Gold-Headed Cane.—At the annual reunion of the House Staff Association of the Toronto General Hospital, Toronto, recently, Dr. John N. E. Brown, former superintendent of the hospital, presided and practitioners from all parts of the province attended. The historic gold-headed cane was presented—in absentia—to Dr. Thomas McCrae. The Toronto General Hospital gold-headed cane is a copy of the original gold-headed cane and was presented to the association by Hon. P. C. Larkin, high commissioner. A replica of the gold-headed cane in silver was presented to Dr. Robert H. Robinson of Toronto, who is now the oldest living ex-house officer, having served as an intern fifty-five years ago.

GENERAL

Honorary Degrees.—Amherst College has conferred honorary degrees of doctors of science on Dr. Robert T. Miller, Jr., associate professor of surgery, Johns Hopkins University Medical Department, Baltimore, Dr. George G. Sears, professor emeritus of clinical medicine, Harvard University Medical School, Boston, and Dr. Edwin St. J. Ward, dean of the medical faculty of the American University, Beirut.

Ethyl Gasoline Committee Meeting.—The first meeting of the committee chosen by Surgeon General Cumming, U. S. Public Health Service, to investigate the possible health hazards in connection with the use of tetra-ethyl gasoline met at Washington, June 29. The members of the committee requested to proceed to the conference are published under Government Services on page 125 of this issue of The Journal.

Yokohama Hospital Appeals for Funds.—The International Committee of the Yokohama General Hospital has appealed for funds to assist the 4,000 American, British and French residents of that city to rebuild the hospital, which was destroyed in the earthquake and fire of 1923. Plans call for a fully equipped hospital costing $100,000, a nursing school and a research laboratory. The new building will be erected on the site of the old one.

New Bedford Holds Automobile Fatality Record.—In the report of automobile fatalities in cities of 100,000 or more by the Department of Commerce, Washington, D. C., New Bedford, Mass., holds the record for 1925 with only one death up to June 20. There were no fatalities for the eight weeks ending June 20, in Fall River, Lynn and Somerville, Mass., and Yonkers, N. Y. In fifty-seven cities with an aggregate population of 27,000,000, there were 2,093 automobile fatalities from January 1 to June 20, reported, as contrasted with 2,016 in the same period in 1923. So far this year, the report states, New York City has reported 425 automobile fatalities; Chicago, 254; Philadelphia, 116; Los Angeles, 108, and Cleveland, 104.

Society News.—At the ninth annual meeting of the Association for the Study of Internal Secretions, Atlantic City, May 26, J. B. Collip, Edmonton, Alta., Canada, was elected president; Drs. Frederick S. Hammett, Philadelphia, and Eugene F. Du Bois, New York, vice presidents, and Dr. Francis M. Pottenger, Monrovia, Calif., secretary-treasurer. ——At the meeting of the Pacific Northwest Medical Asso- ciation, Portland, Ore., June 29-July 1, Dr. Edward M. Lar- son, Great Falls, Mont., was elected president; Dr. James L. Stewart, Boise, Idaho, president-elect; Drs. Homer J. Davidson, Seattle, and Charles H. Vrooman, Vancouver, B. C., vice presidents, and Dr. Frederick Epplen, Spokane, Wash., secretary-treasurer. The next meeting will be held in Glacier National Park.

Bequests and Donations.—The following bequests and donations have been announced recently:

The Lenox Hill Hospital, New York, $40,000, by the will of the late Frederick Wallman.

The New York Foundling Hospital, $1,000, by the will of the late Sarah E. Fox.

Reconstruction Hospital, New York, $100,000, by the will of the late Marianna Cook MacDougall.

The Montefiore and Mount Sinai hospitals, New York, each $10,000, by the will of the late Samuel W. Rice, and the Hospital for Joint Diseases, the Crippled Children's After-Care and Convalescent Home and the Beth Israel Hospital, each $2,500.

The Bloomingdale Hospital for Nervous and Mental Diseases, White Plains, N. Y., an anonymous gift of $100,000 for the erection of cottages for its personnel.

The Decatur County Memorial Hospital, Greensburg, Ind., $2,000, by the will of the late Louisa G. McLaughlin of that city.

The Germantown Hospital, Philadelphia, $100,000, by the will of Mrs. Sarah B. McLean, Philadelphia.

The Harrisburg Hospital, Harrisburg, Pa., $20,000 from the estate of Robert McCormick, given in the name of his father, who was the first president of the hospital.

St. Luke's Hospital, New York, more than $100,000 from the estate of the late Mrs. Louica J. Taylor.

Lenox Hill Hospital and Roosevelt Hospital, New York, each, $2,500; Mount Sinai Hospital, $7,500, and St. Luke's, $2,000, by the will of the late Solomon C. Guggenheimer.

The Lutheran Hospital, Brooklyn, $5,000, as the net proceeds of a bazaar recently held in Ridgewood by the Ladies' Auxiliary.

Jacob Elsas, Atlanta, Ga., has donated $100,000 for the construction of a pay ward at Grady Hospital, Atlanta, on condition that the city raise $300,000 for the same purpose within three years.

By the will of Catherine M. Havens, $8,000, to establish a hospital for Plainwell, Mich., and the income from $15,000 for its upkeep.

By the will of Mrs. Kate F. Morton, $50,000, to establish a memorial hospital in Haskell, Texas.

The Riley Memorial Hospital, and the Sunnyside Sanatorium, both at Indianapolis, $1,000 each by the will of George W. Manlove, Atlanta, Ga.

FOREIGN

Memorials to Physicians.—The medical school at Lyons recently unveiled the bust of the former professor of surgery Dr. A. Poncet, known, among other things, for his insistence on the possibility of inflammatory tuberculosis. At the same time a tablet was affixed in honor of Professor Jaboulay, a pioneer in surgery of the sympathetic system. Both died in 1913.——A tablet was also unveiled recently, at the Madrid provincial hospital, in memory of its former surgeon, Dr. Fidel Pagés.

Personal.—Prof. Richard T. Hewlett will retire, August 1, from the chair of bacteriology at King's College University of London, in consequence of the closing of the department of bacteriology and public health at the college. The title of emeritus professor of bacteriology has been conferred on Dr. Hewlett.——Dr. Lawrence J. Henderson, Medical School of Harvard University, Boston, gave three lectures, June 10-12, at the University of London on "Blood Circulation from the Standpoint of Physical Chemistry."

Denmark Reduces Venereal Disease.—The U. S. Public Health Service says that, according to a report of Dr. F. T. H. Wood of the Health Section of the League of Nations Secretariat, syphilis has been reduced in Copenhagen, Denmark, from 8.8 per 10,000 in 1910 to 4.6 in 1922, and the rate of infection with gonorrhea shows a considerable decline. Denmark was the first country to introduce legislation to control venereal disease. In 1788 it adopted a plan of free treatment and compulsory medical care of persons infected with venereal disease. The effectiveness of this measure has since been strengthened by limiting the practice of medicine to qualified persons, by prohibiting "patent medicine" advertisements, providing hospital facilities and establishing the "State Serum Institute," the main function of which is the laboratory diagnosis of syphilis and the maintenance of a card index of persons infected.

New Regulations for Dentists in South Africa.—The Department of the Interior, Washington, D. C., has submitted a summary of the consul's report on new regulations for the registration of dentists by the Medical Council of Natal, South Africa, which have been approved by the governor general in council. They provide that diplomas from institutions in foreign countries do not entitle the holder to registration in Natal unless he is a citizen or a British subject, or unless the foreign country from which the diploma comes grants equal rights to holders of similar credentials granted and registered in Great Britain. The council will consider applications for registrations from only three universities in the United States—Harvard, the University of Michigan, and the University of Pennsylvania—one in Holland, and twenty in the British Empire. If other American universities wish to be recognized, they must apply to the Natal Medical Council, sending full particulars of their curriculums and examinations. No diploma will be considered in any application for registration unless obtained after a minimum curriculum of four years, including (*a*) attendance for two consecutive years at recognized medical and dental hospitals and schools, with (*b*) proof of having been engaged for not less than three years in acquiring a practical familiarity with mechanical dentistry under the instruction of a duly qualified dentist, provided that one year of such instruction may be taken concurrently with the attendance on hospital practice and lectures, and also that in the case of qualified medical practitioners, two instead of three years shall be sufficient. In all cases a satisfactory preliminary examination in general education shall have been acquired. Any dentist entitled to practice in Natal, who shall:

(*a*) Publicly exhibit specimens, appliances or apparatus of a dental or other nature; or

(*b*) Advertise either in the newspapers or magazines, or by handbills or stationery, billheads, telephone or other directories, or by any other similar agency; or

(*c*) Attempt to attract patients by means of advertisements published in newspapers or circulars or by handbills, describing methods of practice, patented or secret processes, or of such a nature as to indicate claims of superiority over other practitioners, or depreciating the value of their work; or

(*d*) Publish or allow to be published, or exhibit or allow to be exhibited in any place whatever, his scale of professional charges, whether fees alone are mentioned, or cheapness or other advantages indicated; or

(*e*) Display, or allow to be displayed, his name or occupation, or both, in any window or signboard or use any advertising sign other than the usual name-plate recognized by the medical profession; or

(*f*) Practice in any other name than his own; or

(*g*) Fail to comply with any notice issued by the council regarding advertising in breach of this regulation

shall render himself liable to be adjudged by the Medical Council to be guilty of disgraceful conduct in a professional respect, and to have his name erased from the register.

Deaths in Other Countries

Dr. A. Demosthen, emeritus professor of surgery, Bucharest.——**Dr. E. Schwartz,** professor of surgery, Paris, aged 73.——**Dr. P. V. v. Lechler,** founder of the German Institute for Medical Missions, at Tübingen, aged 75.——**Dr. Haushalter,** professor of pediatrics at Nancy.——**Dr. D. A. de Jong,** professor of pathology at Leyden, aged 60.——**Dr. O. Witzel,** until 1924 professor of surgery at Düsseldorf.——**Dr. A. Bilharz,** director of the Sigmaringen Hospital, aged 89, and brother of the discoverer of *Bilharzia haematobium*.——**Dr. C. Emery,** professor emeritus of zoology at Bologna.——**Dr. C. Rubino,** professor of occupational pathology, Genoa.——**Dr. M. Graefe,** chief of staff of a Halle hospital, aged 70.——**Dr. F. Ranwez,** professor of pharmacology, Louvain, president of the Belgian Académie de médecine, and of the Pharmacopeia commission, aged 59.——**Prof. Josef Breuer,** Vienna, said to be the founder of psychanalysis, June 23, aged 83.

CORRECTION

Grains Instead of Grams.—In the abstract of the paper by K. V. Raju, published in the *Indian Medical Gazette*, May, 1925 (The Journal, July 4, p. 71), the composition of Sinton's alkaline mixture is given as "grams" for the various ingredients. This should be "grains."

Government Services

U. S. Public Health Service

Consultants William H. Howell of Baltimore, David L. Edsall of Boston, Waller S. Leathers of Nashville, Edward Julius Stieglitz of Chicago, Reid Hunt of Boston, Albert J. Chesley of St. Paul and Prof. Charles Edward A. Winslow of New Haven, Conn., were requested to proceed, June 29, to Washington, D. C., for a conference relative to the possible health dangers of tetra-ethyl lead in motor fuel.——Surgeons Charles Armstrong and Carroll Fox were directed, June 17, to proceed from Washington, D. C., and Philadelphia, respectively, to Chester and such other points in Pennsylvania as may be necessary, to investigate alleged cases of dengue fever.——Surgeons Carroll Fox, H. F. White, Carl Michel, Assistant Surgeons E. E. Huber, Adolph S. Rumreich, and Passed Assistant Surgeons John F. Mahoney and Harry E. Trimble have been assigned to duty at Los Angeles in connection with plague suppressive measures.——Surgeon William S. Bean, Jr., has been directed to proceed to Boston and New Haven, Conn., in connection with the investigations of spray paints being conducted by the service.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 20, 1925.

Conference on Trypanosomiasis

The delegates of Belgium, France, Great Britain, Italy, Portugal and Spain to the International Conference on Sleeping Sickness, which has been meeting in London, have unanimously decided to make to the council of the League of Nations and to their respective governments the following recommendations:

ADMINISTRATIVE MEASURES

1. Facilities should be afforded for periodic official conferences between administrative and medical officers in charge of the campaign against trypanosomiasis on both sides of the boundaries between infected countries. 2. Special agreements should be concluded between local administrations in order to allow of a rapid and regular interchange of epidemiologic intelligence and information regarding the measures taken for the control of trypanosomiasis on both sides of the frontier. 3. The recommendations of the chief of the medical service in trypanosomiasis areas should be binding on the local administrations. The medical officers in these areas should be given magisterial powers regarding the application of all measures in connection with the campaign against trypanosomiasis; the system of sanitary passports for the native population in the affected areas should, where practicable, be adopted for the control of interfrontier traffic, with the view of reducing it to a minimum; and all information available regarding sanitary passports should be collected and the League of Nations experts' committee requested to prepare a draft sanitary passport. 4. Wherever practicable, measures for the establishment of areas freed from populations should be taken on both sides of the frontier in order to facilitate the control of native traffic.

SPECIAL STUDIES AND INVESTIGATIONS

1. An international commission should be entrusted with the duty of investigating the problems of trypanosomiasis in equatorial Africa.

2. Uganda and the regions in the neighborhood of Lake Victoria represent the territory most suited for valuable research work, which has been carried out for several years at the laboratories at Entebbe, under the leadership of Dr. Duke. Extensive field work has been carried out by the medical services of Uganda and by the administration of the adjoining territory of Tanganyika.

3. The commission should be placed under the control of Dr. Duke, and it should consist of a few workers from the institutes of African powers. It is assumed that the services of a biochemist and entomologist with local knowledge would be available.

Osteopaths Demand Recognition

As stated in a previous letter, a determined effort is being made by osteopaths to obtain official recognition. The minister of health (the Right Hon. Neville Chamberlain) received a deputation from the "British Osteopathic Association," which was introduced by Sir Harry Foster, M.P., who referred to an address recently given to members of Parliament by Dr. Kelman Macdonald on osteopathy, in which he mentioned that he had a list of 150 physicians who had benefited from osteopathic treatment, of whom forty had expressed their willingness to give evidence before any tribunal of inquiry that was established; twenty were willing to give some less active assistance, and the remainder were unwilling to help at all through fear of the censure of the General Medical Council. Dr. Littlejohn, president of the British Osteopathic Association, said that the deputation had not come with any antagonistic feelings to the medical profession; they felt that their spheres of activity were quite different. He referred to the history of osteopathy in the United States, where, he said, it was recognized by law in every state, where there were more than 4,000 physicians, and seven colleges recognized as on equality with the medical schools. In all the states of the Union the physicians who had been trained in these recognized schools were registered and licensed to practice, though the particular arrangements in the different states varied. The object of the association was to obtain in this country: (1) the establishment of a register of qualified physicians, which would involve restricting registration to physicians trained in a recognized school; (2) a supervisory board; (3) the limitation of the designation to those who were on the register, and (4) the establishment of schools of osteopathy. They urged that so far as legislation was necessary to attain these objects it should be favorably considered by the minister. The minister said that the point he had to settle was whether the study and practice of osteopathy had advanced far enough to warrant the proposed legislation. There was nothing at the present moment to prevent the establishment of colleges in this country, and legislation was only required to provide for the licensing and registration of practicing osteopaths, putting osteopathy in this respect on the same level as medicine or dentistry. He pointed out that while there was a clear distinction of function between dentists and physicians, there was no such clearly defined distinction between physicians and osteopaths. It would, therefore, be necessary for him to have further information as to the standard that was contemplated. He asked that further details of legislation in the United States and Canada on the subject should be sent to him. He could not go further than to promise that he would give the subject careful consideration.

Memorial to Osler at Oxford

A bronze plaque in memory of Sir William Osler has been unveiled by the vice chancellor of the University of Oxford, in the presence of a distinguished gathering, including Lady Osler; Sir C. S. Sherrington, president of the Royal Society; Sir A. E. Garrod, Osler's successor in the chair of medicine; Dr. J. G. Adami, representing McGill University, and Sir W. B. Leishman, director-general of the army medical service. The plaque has been affixed in the University Museum. It is the work of the French sculptor F. Vernon and is a replica of that made for the University of Maryland. In presenting the plaque on behalf of the subscriber, Sir Herbert Warren, president of Magdalen, praised the services of Osler, his charm and the inspiration of his personality. The vice chancellor said it was a great pleasure to accept the memorial on behalf of the university. Many knew Osler as a name of authority in medicine, but here he was remembered even more by his never failing kindness, his sympathy, his love of children, and his magnetic personality. He was not only a great man, but a most lovable one. A wreath of laurel and white heather was placed at the foot of the memorial by Mr. J. F. Fulton of Harvard, on behalf of the Inter-State Post-Graduate Assembly of American Physicians and Surgeons. Sir Humphry Rolleston, president of the Royal College of Physicians, said that Osler's services to medicine were remarkable for their infinite variety; his activities were not mainly confined, as have been those of some heroes of our profession, to one field, such as laboratory research, clinical observation, teaching or education; he played a prominent part in all these spheres. He first made his mark by investigating the Canadian *Diatomaceae*, then the blood platelets and the malarial parasite. As a morbid anatomist at McGill he laid the foundation of that sense of proportion so essential for the physician. As a clinician he established new syndromes, such as erythremia, hereditary telangiectases and splenic anemia, and pointed out certain symptoms or signs in recognized diseases, so that "Osler's nodes" in subacute bacterial endocarditis are familiar. The most modern methods of the laboratory were fully utilized to supplement the routine and thorough examination of the patient. Like Trousseau, he ranged over the whole field of medicine; his output amounted to more than 770 books, papers and addresses. Owing to his perpetual youth he had an inspiring influence and wide sympathy and knowledge of young men, teaching them not only medicine but also humanity and the way of life. His great textbook was remarkable alike for its conciseness, completeness and atmosphere of personal experience. His most remarkable success was as an educator of the medical profession, which was largely due to his personality. An Osler memorial fund has also been formed and gratefully accepted by the University of Oxford. From it a bronze medal will be awarded once in five years to the Oxford medical graduate who shall have made the most valuable contribution to the science, art or literature of medicine. The first award of the medal has been made to Sir A. E. Garrod. The residue of the income of the fund may be used in making grants to teachers in the Oxford Medical School to enable them to pursue outside the university some special study connected with medicine.

Beneficial Parasites

In reply to a question in the House of Commons, Mr. Ormsby-Gore, undersecretary for the colonies, said he understood from the director of the imperial bureau of entomology that, during the eighteen months in which the experiment of breeding beneficial parasites with a view to fighting insect plagues in the oversea dominions was being carried out, two successful introductions of beneficial parasites were effected—namely, a parasite of the pear-slug, which was causing serious damage to orchards in New Zealand, and a parasite that was introduced from Nyasaland into Nigeria, with a view to control of *Glossina tachinoides,* a species of tsetse-fly prevalent in Nigeria. Two parasites of the earwig had also been introduced into New Zealand, but, owing to difficulties in rearing them in the laboratory there, the strains had died out. Unfortunately, this work had to be suspended, but it was hoped to resume it shortly.

A Bishop on Birth Control

Preaching at Brighton to a congregation attended by many of the members of the annual congress of the Royal Institute of Public Health, which was being held in that city, the bishop of Birmingham said that our civilization had been transformed in the last hundred years by public hygiene. But this new world had problems as difficult as any which mankind had met. Human welfare was now menaced by human fecundity. The growth of our population had been such that vast masses were deprived of the uncramped existence necessary to health. Was the social conscience now conniving at racial degeneration? The better stocks were increasing slowly, if they increased at all, whereas seventy years ago they were probably increasing almost as rapidly as the general population. The change from large to small families in the middle classes, based on good motives, was not to be condemned. Many thinkers regarded the crowded state of Europe as the main underlying cause of the Great War. They felt that a like catastrophe would recur unless that altruism which limited the increase of population could be made to prevail. By medicine and hygiene, Nature's destructive forces had been conquered, but the victory would be disastrous to human welfare unless a desire for many children which was natural, and until recently laudable, was now held in check. In such constraint there was an element of self-renunciation which was surely Christian. There was a limit to the population which these islands could bear. Through education much more might be done to prevent reckless child bearing and to secure a decrease of reckless fecundity. It was wrong that children should swarm in overcrowded slums. The community had a right to take measures to prevent the increase of tainted stocks. It would be wise to teach its more improvident members that large families were a hindrance to social progress. Only as we created in all ranks of the community a sense of grave responsibility on the part of parents toward their children—only as we pressed that responsibility even to the limit of renunciation of parenthood, could we get a possibility of stable social advance.

Honors for a Blood Donor

Mr. B. W. Tibble, a working printer, has been awarded the O. B. E. (Order of the British Empire) and a life governorship of the London Hospital for helping to save the life of about seventy patients by giving his blood for transfusion.

NETHERLANDS

(From Our Regular Correspondent)

June 18, 1925.

International Collaboration

The Royal Academy of the Netherlands, in concert with the Academy of Sciences of Denmark, has been using every effort to induce the International Council of Research to admit the central powers to membership. In some other fields, similar endeavors have been crowned with success. The last congress of the International Institute of Anthropology, which was held in Prague, passed the following resolution, which was proposed by the delegate from the Netherlands:

> The International Institute of Anthropology hereby affirms anew that it is permeated by a spirit of loyal and disinterested cooperation unaffected by any tendencies other than scientific, and authorizes its central bureau to reach some understanding with its various branches so that this cooperation may take on a completely international character, such as befits the spirit of the institute.

Health Certificates as Preliminary to Marriage

A project that was first proposed in 1923 has now been realized through the collaboration of a strong health insurance society. The latter has furnished the organizers with the needed quarters for the establishment of a special consultation service for the examination and counseling of persons contemplating marriage. At the opening of the service, Professor Van Emden recalled the various stages through which the marriage consultation bureau idea had passed. Professor Van Rooy emphasized that the sole purpose of the bureau was not to examine matrimonial candidates as to the presence of venereal disease, but to give them a thorough health examination. No treatment will be given by the bureau, but applicants who prove to be in need of treatment will be referred to their regular physician or to a specialist.

Pneumonoconiosis

The report of the bureau of labor inspection contains a detailed study on the trade of quarriers and stone cutters, and gives some interesting details of the operation of a law that has been in force since 1921. Up to 1921, the trade had been regulated by a law that did not require the regular examination of adult workmen. The new law, however, provides for the examination of workmen every three years at the longest, in order that the dangerous processes resulting from the continued inspiration of dust, leading to pneumonoconiosis, may be supervised and controlled. The latest researches, covering 963 individuals, showed 498 persons without physical defects and 465 with clinical signs of pulmonary lesions, the presence of which was confirmed in more than 100 instances by a roentgenographic examination. These results furnish sufficient evidence for the need of medical supervision of this industry.

The Basis of the Test for the Securing of an Automobile Driver's License

A new tendency is manifesting itself in the medical world in connection with the determination of the minimal physical and mental requirements that should be made the basis of automobile drivers' licenses. It is being emphasized that a distinction should be made between a license for (1) drivers of private automobiles, for which an examination by any practicing physician would suffice, and a license for (2) professional drivers, for which a more detailed examination requiring the assistance of specialists would be needed.

Medical Education

The medical section of the Vryzinnig Christlyken Studentenbond will soon discuss the question of medical education. The Studentenbond alleges that in the present form of instruction the education of the future physician is limited to technical training and that the physician's moral conception of his profession is completely ignored. It holds that, along with his professional training, the young physician should receive such a general education as would cause him to appreciate better the responsibilities of the position he is to occupy.

The Psychotechnical Laboratory in the Army

The *Nieuwe Rotterdamsche Courant* recalls the difficult experiences that the two officers Rouffaer and Alting had in 1919 and 1920 in endeavoring, at the time of recruiting, to reach any definite conclusions in regard to the aptitudes of recruits, so as to assign them to the branches of the service for which they were best fitted. In 1922, the minister of war appointed a commission to study into the problem and report the results of their researches. The report of this commission resulted in the creation in the army of the bureau of psychotechnical examinations, installed at Utrecht at the military school for gymnastics and sport. For the present the bureau will confine itself to making selections on the basis of the general intelligence of the subject. The intelligence test will be given at twenty different recruiting stations. The final selections will not be made until after the recruits have been mustered in, but then an endeavor will be made to select through the indications of intelligence tests the men who are peculiarly fitted for the signal service, the telephone service, the artillery service, and so forth.

Coloration of Foodstuffs

The review *Volksvoeding* protests against the inordinate use of coloring matter in various foodstuffs, notably in the manufacture of butter and pastries. The law does not permit the use of other than absolutely harmless coloring substances; but that is not all. The coloring introduced into a substance must not deceive the buyer with regard to the quality of the article offered for sale. But very often—especially in the case of pastry—the use of a yellow coloring matter is solely for the purpose of indicating the presence of eggs. This is a form of trickery and should be protested against, not only from a hygienic but equally from an economic point of view.

The New Red Cross Hospital

The Red Cross Society of the Netherlands is erecting a new hospital at The Hague. This hospital, of which E. Cuypers is the architect, will occupy an area of 110 by 210 meters and will be surrounded by a city park. The hospital will accommodate 145 patients. The quarters reserved for the medical and the surgical services, the policlinic, the nurses' apartments and for purposes of instruction are separate from the rooms and wards of the patients. All the rooms of patients have a southern exposure and an outlook into the park. Just under the roof are open porches, or *loggias*, for sun treatment. Two operating rooms with thoroughly modern equipment adjoin the hospital. Prof. W. Nolen will be director of the hospital. The total cost of the hospital will amount to 1,925,000 florins, or approximately $770,000.

BUCHAREST

(From Our Regular Correspondent)

June 20, 1925.

Tuberculosis and Travel

With the beginning of the vacation season, the supreme sanitary board has inspected all bath resorts and has ordered the correction of any defects. The attention of the board has been called also to the use of conveyances for travel by sick persons. Dr. Panaitescu, teacher of hygiene, has particularly emphasized the risk of the spread of typhoid infection by the present haphazard method of disposing of excrement on railway journeys. A more obvious, as well as a more widespread, danger, is the diffusion of tuberculous disease by expectoration in railway carriages. In the third class carriages, passengers are scarcely able to protect themselves from filth. It would be well if the use of leather or some other smooth upholstering stuff were substituted for the materials used since the termination of the war, though, of course, such a change would be useless unless proper cleansing methods were employed. It is the duty of the medical profession, said Dr. Panaitescu, to impress on the public the necessity of adopting simple safeguards.

Differential Diagnosis of Chancre of the Tonsil

Dr. Popovici, director of a large venereal hospital in Jassy, recently reported a peculiar case in the Cluj Medical Society in which a crypt of the tonsil infected with staphylococcus was regarded by many experienced observers as a hard chancre. The crypt was of a peculiar form, deep and funnel shaped, with an overhanging rim, and being half filled with a dirty grayish mass it presented all the appearances of a primary lesion. It disappeared, however, without antisyphilitic treatment, on the application of 5 per cent. boric acid ointment, and it was only on the appearance of syphilitic manifestations two years later that its true nature was realized. Dr. Popovici remarks that though a hard chancre in one of the usual situations does not as a rule present much difficulty in diagnosis, yet when it occurs in so rare a site as the tonsil it is natural that some confusion may arise. It has been mistaken for such varying conditions as simple tonsillitis, diphtheria, epithelioma and a tertiary lesion. The confusion with diphtheria and other ulcerating infections is most common, and Krefting of Christiania, who has reported thirty-six cases of chancre of the tonsil, mentions that many of the patients had been sent to the diphtheria ward. In some cases the lesion has been excised as an epithelioma, the mistake being discovered only when the specimen was subjected to microscopic examination.

Callus Formation in the Fractures of Osteomalacia

Dr. Aruncovici reports two cases in which the roentgenograms, taken several months after the injury, show no signs of callus formation. In one case there was a very faint shadow around the fracture of the bones of the forearm. Some degree of union seemed to have taken place, but the very slight deposit of lime salts permitted the rays to pass through without interference. In the other case the fragments were not in apposition, and the picture taken six months after the injury showed absolutely no evidence of repair. Dr. Aruncovici thinks that the reason that in one case there seemed to be formation of a functional callus, but without the presence of lime salts, while in the other there were absolutely no traces of a callus, is that osteomalacia in the former case had not advanced as far as in the latter; for it is well known that the more the disease has advanced, the less likely is repair to take place. These observations also show that the roentgen rays afford a very effective means of gaging the stage to which the process has advanced, for, in the first case, the bone presented a spotted or marbled appearance, while in the other the bone structure could not be detected.

Transmission of Tuberculosis in Married Couples

Dr. Georg Vali has investigated the life history of a number of widows and widowers whose partners have died of tuberculosis. Having ascertained from the registers of deaths the names of married persons who had died of pulmonary tuberculosis, he noted the causes of death of the consorts. Control statistics were provided by making similar researches in regard to the deaths of married persons who died from other causes. The first group comprised 280 persons with forty-seven deaths, all of them being due to tuberculosis; in the second group, 298 persons with fifty-two deaths, only eight were from tuberculosis. The survivors in both categories were followed up for periods varying from five to fifteen years and the results were tabulated according to age in order to admit of fair comparison. He found that between the ages of 30 and 40 the proportion of deaths from tuberculosis was nine times greater on the part of the husbands and wives of tuberculous persons than among the general married population. The fact that this excessive tuberculosis mortality is not due to feebleness of constitution is shown by the fact that their mortality from other causes was not above the normal. The point is also illustrated in another way; for while the mortality from tuberculosis was only 1.2 in fifty-two for all widows and widowers indiscriminately, it was 7 in fifty-two for those whose partners had died of tuberculosis. It is certainly a significant fact, says Dr. Vali, that at a period of life which may be taken to correspond to recent widowhood the tuberculosis mortality is eight or nine times above the normal. This is only what one would have anticipated, but these statistical results establish the reality of the risk incurred by married persons afflicted with a tuberculous partner, and the knowledge may perhaps induce more prudence on the part of young persons in concluding marriage.

Malarial Problems in Albania

The government of Albania has taken in hand its greatest problem, malaria. More than 60 per cent. of the inhabitants of malarial districts actually harbor the plasmodium of malaria in their blood, and it is probable that practically all of them have suffered from the disease at some time or another. It has been shown that dwellers in malarial districts gain, as the result of previous attacks and the long continued presence of the plasmodium in their blood, a kind of immunity which protects them as a rule from further attacks. But with strangers coming to this district it is different, and the natives, though immune themselves, are a potent source of infection to newcomers. The task before the sanitary officials, then, is no light one. The government intends to import and keep many hundreds of foreign laborers to teach the inland populations new industries. It will be necessary either to destroy the parasites in the natives or to keep the laborers immune by means of quinin or to destroy all the mosquitoes that could act as carriers of infection.

BERLIN

(From Our Regular Correspondent)

June 20, 1925.

Regulations to Control the Use of Narcotics

The federal ministry of the interior, after considering charges (apparently well founded) that narcotic drugs are being secured for improper uses on the basis of physicians' prescriptions, has drawn up the following regulations for the observance of physicians:

1. In prescribing opium, morphin, cocain and diacetylmorphin (heroin) or preparations containing one or more of these drugs, physicians must in every instance inquire most carefully into the necessity of such narcotics being employed and must exercise the greatest caution in determining under what form and in what quantities they are to be used. They must constantly bear in mind that many persons will try to deceive them in order to secure narcotics for improper uses. Physicians should not issue a written prescription for narcotic drugs unless they are assured in their conscience and are willing to hold themselves responsible before the medical profession for the kind and quantity of drugs prescribed.

2. Physicians must be exceedingly careful to prevent any of their prescription blanks falling into unauthorized hands. In case the pharmacist telephones or seeks information in any other manner in regard to a prescription that has been presented to him, a physician must graciously furnish him the information needed, bearing in mind that the pharmacist is only acting in accordance with his duty.

3. Prescriptions covering narcotic drugs must be made out with great care, so that the pharmacist will have no doubt as to their authenticity. If a physician should have no printed blanks at hand, he must take special pains that the whole appearance of the prescription shall be such as to awaken no suspicion as to its genuineness.

4. Written requests to a pharmacist to furnish narcotic drugs in larger quantities for a dispensary or for hospital use must always take the prescribed form of prescriptions. Such requests must be signed by the physician, and not by the nurse or other medical attendants.

5. Narcotic drugs for the use of patients should be prescribed only in a form ready for use (solution, tablets, ointments, etc.). The quantity should be limited strictly to the needs in the given case. References to refilling prescriptions for narcotic drugs are out of place, since the dispensing of narcotics (also in solutions, etc.) requires a new prescription each time. Also for his personal use and for the use of patients in his office practice, a physician should procure narcotic drugs only in a form ready for use and only in such quantities as are habitually employed in medical practice.

The Haff Disease

Fourteen new cases of the peculiar Haff disease have been reported. For the further investigation of the causes of the disease, a special laboratory of chemical research has been established in Pillau, near Königsberg, of which Prof. Dr. Lockemann of the Robert Koch Institute for Infectious Diseases in Berlin has been appointed director. The chemical and experimental researches, which, up to now, have been carried out in the laboratory at a distance, will be continued at the actual site of the occurrences. The scientific institutes of Königsberg are working in common with the experts from outside and the health officers of the government board to clear up the situation with regard to the Haff disease. Extensive operations have either already been undertaken or are being planned for the improvement of conditions affecting the waste waters discharged by the Königsberg canalization system.

The New Census

The general census to be taken, June 16, 1925, will include an enumeration of the population and a statistical survey of the trades, professions and industries. The last enumeration of the population was made, Dec. 1, 1910, and the last general census of the trades, professions and industries was taken, June 12, 1907. The enumerations made in 1916, 1917 and 1919 were undertaken either for war purposes or to establish an economic basis for food distribution. They did not include the whole population of the country, nor did they give a complete survey of the industries. The need of new statistical information concerning the population of the whole country, its political subdivisions and its cities, towns and communes, and, above all, the lack of definite bases for judging the industrial and social organization of Germany and the structure of our economic life, are becoming more and more keenly felt. For technical and financial reasons, the statistical survey of the trades, professions and industries is to be made along with the enumeration of the population. The plans for the taking of the census were worked out by the federal bureau of statistics, with the cooperation of the provincial statistical bureaus, experts in the fields of agriculture, industry and commerce; representatives of organizations of employers and employed; also other professional organizations. The primary statistical material will be collected by the provincial governments, and the vast work of collating the statistical material will be performed by the provincial statistical bureaus. The final systematic arrangement of the material and the tabulation of results will be carried out by the federal bureau of statistics.

The Badische Gesellschaft für soziale Hygiene has petitioned the Reichstag to have information collected as to the number of persons with invalidity insurance (*Invalidenversicherung*). The collection of health statistics in Germany is carried out imperfectly as compared with foreign countries—England, for example. In connection with the industrial census of 1907, information was collected as to invalidity insurance, but like information was not secured at the industrial census of 1895. Statistics on the number of persons insured against invalidity would be of great value in the collection of health statistics. Not only could the age distribution of the insured be compared with the age distribution of the noninsured, which would furnish an important insight into health conditions among the insured, but it would become possible to use the hitherto totally unused mass of statistical material collected by the provincial insurance bureaus on the causes of invalidity. This statistical material is particularly reliable, since the reported causes of invalidity are based on precise medical examinations by experts. Statistics on the causes of invalidity would be much more trustworthy than the statistics on the causes of death or of illness, as collected by the health insurance societies. But, in order to make full use of the statistics on the causes of invalidity, the number of the insured, from whose ranks those drawing pensions on the basis of invalidity have sprung, must first be ascertained.

The Influence of Vitamins on Nutrition and Nutritional Disturbances

In the pediatric section of the Berlin society of internal medicine and pediatrics, Professor Reyher recently discussed the part that vitamins play in the nutrition of infants. Our lack of knowledge of the chemical structure of vitamins, together with their lability, renders research work on these accessory food factors difficult. A deficiency of vitamin C leads to scurvy in infants. The four stages in the evolution of scurvy are marked by changes in the weight curve: (1) period of slow increase; (2) standstill; (3) slow decrease, and (4) sudden loss of weight. Loss of appetite, peevishness, and loss of turgor are early signs of the disease. An incipient polyglobulism is followed later by anemia; on recovery, the erythrocytes are again increased. Resistance to infections is lowered. During convalescence, the symptoms disappear in the same order in which they first appeared—the more severe the disturbance, the more slowly the symptoms recede. The duration of the fever in the scorbutic child is longer, the more advanced the scorbutic injury was. In "scorbutic atrophy" it may require months to bring about defervescence, in spite of the ingestion of food rich in vitamins. Monothermia in an infant is, therefore, a sign of health and normal nutrition. The numerous infections as a result of lowered resistance arising out of defective nutrition due to scorbutic effects, together with hemorrhages, are coordinate phenomena in scurvy. Hemorrhage occurs only as the result of trauma. The scorbutic depletion of nutrition and not the more manifest Barlow's disease is the most frequent expression of lack of vitamin C. We may have bronchitis, pyuria and toxicosis associated with deficiency of this vitamin. A deficiency of vitamin B in the food causes similar havoc. The following disease conditions are traceable, on the basis of therapeutic results, to a deficiency of antineuritic vitamin: (1) avitaminotic premature birth—that is, premature birth in mothers in whose food vitamin B was lacking; (2) alimentary edema in young infants born of mothers who suffered from eclampsia or hyperemesis gravidarum; (3) pylorospasm in infants; (4) disturbed nutrition of spasmogenic origin, which, in its widest application, includes tetany, and among the manifestations of which vegetative symptoms and cardiac enlargement are always present, whereas tests with the electric current may not show hyperexcitability, and (5) intestinal infantilism, which is cured in a few months by the ingestion of food rich in vitamin B. A deficiency of both vitamins B and C leads to exudative diathesis and rickets. Rickets is not due to a lack of fat-soluble vitamin A. Rickets yields, however, to a diet rich in vitamins B and C. All other antirachitic therapeutics (even the quartz mercury vapor lamp) prove inefficacious, except at such seasons when the food is rich in vitamins B and C—namely, in May and June. The existence of vitamin A does not seem to be absolutely established. Large quantities of food containing vitamin C have to be ingested before beneficial results are secured. Vitamin C is impaired only by heat, desiccation and preservatives. The content of vitamin C in foodstuffs depends also on the fertilization of the soil and on climatic factors. If the soil lacks fertilizers or there is insufficient rainfall, vegetables and fruits contain scarcely any vitamins. In order to obtain milk rich in vitamins, cow feed raised on adequately fertilized soil should be used.

Reyher's address was followed by a spirited discussion. According to Hamburger, the supposed effect of vitamin B on the gain in weight may not be due to the action of vitamins, but may possibly be explained as the effect of the protein contained in the yeast. In opposition to the view that pyloric spasm is due to a lack of vitamin B may be adduced the fact that operative intervention cures the condition without change of diet. Götzky observed a decline of morbidity and mortality in a home for infants following prompt and regular ingestion of vitamins, and good effects of vitamin B in pyloric spasm and infantilism. Finkelstein warned against taking exaggerated views in regard to avitaminoses and assumed a somewhat skeptical attitude toward the supposed disease conditions pictured by Reyher. E. Müller stated that some of the effects ascribed to vitamins may be due to mineral substances. Procedures that injure vitamins destroy, or modify the effects of, organic salt compounds. H. Davidsohn expressed some doubt as to whether an infant's food was ever so poor in vitamin B as to cause disturbances, especially since vitamin B is much more resistant to all intervention than vitamin C. L. F. Meyer doubted the existence of avitaminoses due to a deficiency of vitamin B but felt that the many effects arising out of a lack of vitamin C in infants' food could not be sufficiently emphasized. In a hospital for infants it had been found that therapeutic effects could be brought about only by the ingestion of large quantities of vitamins (from 50 to 100 gm. of fruit juice daily). All infections, tuberculosis included, increase the need of vitamins, and a rapid succession of infections in winter can be prevented only by large quantities of vitamin C. Scorbutic hemorrhages usually appear in connection with infections due to a deficiency of vitamins, although the ultimate cause may be a trauma. Langstein was agreed that the question of milk supply should be investigated anew in the light of our knowledge of vitamins. Orgler emphasized that, since an infant's food is never entirely lacking in vitamins, facts observed in animal experiments cannot be assumed, without further investigation, to hold good in human pathology. Nassau observed, following ingestion of vitamin B, an improvement in appetite but only a temporary beneficial effect on the gain in weight, and no effect in the prophylaxis and cure of tetany. Reyher stated, in closing the discussion, that, as the result of an increased ingestion of vitamins, the mortality in his institution had been reduced two thirds.

Criteria for the Determination of Blindness

At the request of a committee of the federation of Saxon societies for the blind (*Blindenvereine*), the Saxon bureau of public health has published the following criteria to determine whether a subject is, for all practical purposes, "blind": 1. The question should be established, in case of doubt, by a certificate of an ophthalmologist. 2. According to official regulations, the category of "blind" persons includes not only those who are totally blind but also those whose acuity of vision is less than 1/25 of normal, although many such persons may be able to find their way about the streets without a guide. 3. This limit for central vision may be exceeded if, in addition to the weakness of vision, there is also a considerable reduction of the field of vision, which may be caused chiefly by atrophy of the optic nerve, glaucoma, pigment degeneration, detachment of the retina or hemianopia. In such cases, the ophthalmologist must state the special reasons why an applicant should be admitted to a *Blindenverein*. Also advanced age, or the fact that the applicant has no near relatives to take care of him, may be taken into account.

Marriages

Richard Poollard Pullen, New Britain, Conn., to Miss Ruth Agnes Lindstrom of East Greenwich, June 10.

Kenneth Alexander Morris, Jacksonville, Fla., to Miss Mildred Lockwood Pool of New Orleans, June 16.

George Lane Taneyhill, Jr., Baltimore, to Miss Marguerite Guard McAllister of New York, June 25.

Kamil Schulhof, Chicago, to Miss J. Serrita Jane of Chicago, formerly of San Francisco, July 3.

Joseph Paul Graves, Kenosha, Wis., to Miss Jeanette Valeria Schreiner of New Holstein, June 22.

Harold J. Norton, Columbus, Ind., to Miss Helen Green Patten of Springfield, Ohio, April 28.

Ralph C. Meloy to Mrs. Nell Brainard, both of Claremore, Okla., at Tulsa, in April.

David Major Bell, Canonsburg, Pa., to Mrs. Jeanne Russell Bell of Dormont, June 25.

Robert Lovell Samuel to Miss Ada Rubenacker, both of Maysville, Ky., in June.

Edward Michael Tapper to Dr. Deborah H. Cohen, both of Brooklyn, June 21.

George David Hauberg, Moline, Ill., to Miss Emma Rydell of DeKalb, June 24.

Deaths

Henry M. Thomas ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1885; clinical professor of neurology, Johns Hopkins University Medical Department; member of the American Neurological Society (pres. 1910-1911), the Maryland Psychiatric Society, the Philadelphia Neurological Society and the Association for Research in Nervous and Mental Diseases; neurologist to the Johns Hopkins Hospital, 1894-1925, and the Presbyterian Eye, Ear and Throat Hospital; aged 64; died, June 21, at his country home at Blue Ridge Summit, Pa., of heart disease.

William A. Peterson ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1897; member of the Chicago Ophthalmological Society; for twenty years medical director of the Mutual Trust Life Insurance Company; aged 58; died, June 28, at the Presbyterian Hospital, of pyelonephritis, following an operation.

George Fillmore Severs, Centerville, Iowa; Drake University College of Medicine, Des Moines, 1887; Eclectic Medical Institute, Cincinnati, 1889; member of the Iowa State Medical Society; for thirteen years a member and at one time president of the state board of health; aged 67; died, June 22.

George Fraser Wilson, Miami, Fla.; Medical College of the State of South Carolina, Charleston, 1901; member of the South Carolina Medical Association; professor of obstetrics, Medical College of the State of South Carolina, Charleston; aged 46; died, June 12, at the Johns Hopkins Hospital, Baltimore.

Reginald Harry Brett, Banff, Alta., Canada; University of Manitoba Faculty of Medicine, Winnipeg, 1902; coroner of the district of Banff and medical officer for the Rocky Mountain Park; superintendent of a hospital bearing his name; aged 46; died, May 8, at Edmonton.

Henry Joseph Dilberger, Brooklyn; Long Island College Hospital, Brooklyn, 1911; member of the Medical Society of the State of New York; attending physician to St. Anthony's Hospital and St. Peter's Hospital, where he died, June 23, following an operation, aged 53.

Charles W. West ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1905; member of the Philadelphia Pediatric Society; formerly pediatrician to the Medico-Chirurgical, Polyclinic and National Stomach hospitals; aged 48; died, June 23.

Thomas Jefferson Shinn, Wagoner, Okla.; University of Arkansas Medical Department, Little Rock, 1905; member of the Oklahoma State Medical Association; president of the Wagoner County Medical Society; aged 48; died, May 9, of miliary tuberculosis.

Uriel H. Squires, Hebron, Neb.; Cleveland University of Medicine and Surgery, 1882; member of the Nebraska State Medical Association; president of the Thayer County Medical Society; aged 71; died, June 20, of carcinoma of the intestine.

Harry F. Blailock, Waco, Texas; University of Texas Department of Medicine, Galveston, 1900; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War; aged 50; died, June 12.

James McCall, Jr., Terre Haute, Ind.; Medical College of Indiana, Indianapolis, 1897; member of the Indiana State Medical Association; formerly on the staff of St. Anthony's Hospital; aged 54; died, June 22, of heart disease.

George E. Letourneau, Rouses Point, N. Y.; Victoria University Medical Department, Toronto, Ont., Canada, 1879; member of the Medical Society of the State of New York; health officer of Rouses Point; died, May 24.

James Buchanan Neale, Reynoldsville, Pa.; Cincinnati College of Medicine and Surgery, 1885; member of the Medical Society of the State of Pennsylvania; aged 66; died, May 13, of chronic nephritis and bronchopneumonia.

William T. Gautier, Los Angeles; University of Louisville School of Medicine, 1876; member of the Medical Association of Georgia; aged 70; died, June 18, of injuries received when struck by an automobile.

Donis E. Wilhelm, Kansas City, Mo.; University Medical College of Kansas City, 1907; served in the M. C., U. S.

Army, during the World War; aged 41; died, June 15, at the U. S. Veterans' Hospital.

Cecil Champenois, Meridian, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1899; member of the Mississippi State Medical Association; aged 51; died suddenly, June 16.

Norman Bruce Edgerton ⊕ Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1912; member of the American Urological Association; aged 38; died, June 16, of pneumonia.

Leslie Clyde Burton, Clayville, Va.; Maryland Medical College, Baltimore, 1910; served in the M. C., U. S. Army, during the World War; aged 41; died, May 20, at a hospital in Richmond.

Karsten A. L. Zetlitz ⊕ Los Angeles; University of Christiania, Norway, 1888; member of the South Dakota State Medical Association; aged 63; died, June 17, of carcinoma of the lungs.

Edgar O. McCall, Portsmouth, Ohio; Cleveland College of Physicians and Surgeons, 1890; member of the Ohio State Medical Association; aged 66; died, June 18, at the Mercy Hospital.

Alfred C. Palmer, Urbanna, Va.; University of Maryland School of Medicine, Baltimore, 1881; at one time a member of the state board of medical examiners; aged 68; died, May 29.

Rolf Frederick Nannestad, Lanesboro, Minn.; University of Minnesota Medical School, Minneapolis, 1921; member of the Minnesota State Medical Association; aged 29; died in May.

John H. Miller, Delaware, Ohio; University of Pittsburgh School of Medicine, 1887; member of the Ohio State Medical Association; aged 66; died, June 15, of pernicious anemia.

Lucy Morton Robinson, Brockton, Mass.; Woman's Medical College of Pennsylvania, Philadelphia, 1888; member of the Massachusetts Medical Society; aged 85; died, June 12.

George Irving Bluhm ⊕ San Francisco; College of Physicians and Surgeons, Chicago, 1894; aged 57; died, June 20, at the Lane Hospital, of shock following an operation.

William Lewis Chapman, Jr., Brooklyn; Long Island College Hospital, Brooklyn, 1923; intern, Kings County Hospital; aged 26; died, June 14, of chronic nephritis.

William L. Parchman, Van Buren, Ark.; Memphis (Tenn.) Hospital Medical College, 1901; member of the Arkansas Medical Society; aged 71; died, June 4.

O. W. Turner, Helena, Ga.; Atlanta Medical College, 1886; member of the Medical Association of Georgia; aged 81; died, June 16, following a long illness.

John W. Williams, Irwin, Va.; Medical College of Virginia, Richmond, 1864; member of the Medical Society of Virginia; aged 86; died, May 11.

David Reiter, Philadelphia; University of Pittsburgh School of Medicine, Pittsburgh, 1909; aged 52; died, June 26, at the Lankenau Hospital.

Franklin Crawford Newton, San Francisco; Cooper Medical College, San Francisco, 1894; aged 54; died, June 14, of tuberculous meningitis.

Hugh Wilson Sweeney, Monroe, La.; College of Physicians and Surgeons, Baltimore, 1908; aged 42; died, May 10, of heart disease.

Henry B. Pettingill, New York; Detroit College of Medicine and Surgery, 1887; aged 74; died suddenly, June 16, of heart disease.

John S. Parson, Ashland, Ore.; Jefferson Medical College of Philadelphia, 1873; aged 74; died, May 11, of cerebral hemorrhage.

John Sterling Carriger ⊕ Chelsea, Okla.; Bellevue Hospital Medical College, New York, 1886; aged 62; died, May 19.

Peter Aylen, Fort Saskatchewan, Alta., Canada; McGill University Faculty of Medicine, Montreal, Que., 1886; died in April.

Harold Grant Marvesyn Nyblett, Calgary, Alta., Canada; Trinity Medical College, Toronto, 1896; aged 54; died, April 28.

Augustine Ben Childs ⊕ Keithsburg, Ill.; Rush Medical College, Chicago, 1908; aged 44; died recently.

Putnam Francis Peet, Franklinville, N. Y.; Kansas City Homeopathic Medical College, 1892; aged 78; died, March 28.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

RHEUMEEZ NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. Puckner, Secretary.

Rheumeez (Casco Laboratories, Elizabeth, N. J.) is claimed to be magnesium cinchophen, the magnesium salt of 2-phenylquinolin-4-carboxylic acid.

From the advertising one gains the impression that the production of a magnesium salt of cinchophen is a noteworthy achievement on the part of the Casco Laboratories and that the product is therapeutically superior to cinchophen. The compound appears, however, to be the analogue of the well known sodium cinchophen which is formed when cinchophen is dissolved in water with the aid of sodium bicarbonate. Further, when a solution of Rheumeez is treated with hydrochloric acid, 0.2 per cent., cinchophen is precipitated out. Evidently, then, the compound will be decomposed in the gastric fluid of the stomach and its administration will be equivalent to the administration of cinchophen accompanied by an insignificant amount of magnesium (a tablet which is claimed to contain 2½ grains would yield less than ½ grain of magnesium chlorid ($MgCl_2$).

Rheumeez is advertised to the public both directly and indirectly. The therapeutically suggestive name, the fact that this name is blown in the glass of the container in which the liquid form is sold and the therapeutic recommendations that appear on the label of the bottle all tend to bring the product to the attention of the public if it is prescribed by a physician. The following from the Rheumeez circular shows that the product is exploited direct to the public:

> "How to take Rheumeez. Rheumeez comes in a small box, 20 tablets to the box, which can be easily carried in the vest pocket, or purse. Always have your Rheumeez with you so that you can consistently follow its directions. Take one tablet three times daily, after meals, and follow with a glassful of water. When the first box is finished, if you are still suffering in the slightest way, write us at once for another box."

The Council refused recognition to Rheumeez because (1) it is an unessential modification of the established drug cinchophen; (2) it is marketed under a nondescriptive, therapeutically suggestive name, and (3) it is advertised with unwarranted and misleading claims which will lead the public to attempt self-medication in conditions which require the diagnosis and supervision of physicians.

Correspondence

ELECTROTHERAPEUTIC APPARATUS

To the Editor:—In The Journal, June 20, is a question asked by Dr. S. B. Koory of Schuyler, Neb., relative to the value of the various electrotherapeutic apparatus. In reading this over, one gains the impression that the high frequency apparatus is fitted or used mainly for fulguration, desiccation or electrocoagulation, the answer merely mentioning diathermy and autocondensation. It is difficult to give a detailed answer to such a question, but it might be well to stress the value in other directions, as, for instance, diathermy and autocondensation in the many metabolic conditions which are peculiarly amenable to electrotherapy properly applied, and for which drugs do so little. Other modalities as well are valuable, such as the static and constant currents, actinic and radiant energy.

Naturally, the salesman is commercial, and too many physicians permit him to give all the education they ever receive before taking up the work. I feel that we cannot too well equip ourselves with the proper knowledge of the physics and therapeutic applications of the currents before starting out to cope with the ills of mankind. Our incompetence in the past has had largely to do with the ban on electrotherapeutics under which it labored for many years.

WILLIAM MARTIN, M.D., Atlantic City, N. J.

WAR VETERANS EDUCATED FOR MEDICINE

To the Editor:—The national government has educated for the medical profession hundreds of men, and still has in training many hundreds more.

These men are in the leading colleges and universities of the country and are scattered from coast to coast. The chief cities in which this training is given, and the number of men being trained for medicine in these cities, are: Boston, 20; New York, 21; Philadelphia, 32; Washington, D. C., 16; Atlanta, Ga., 10; Cincinnati, 13; Chicago, 47; St. Louis, 19; Minneapolis, 17; San Francisco, 16; Los Angeles, 9, and Denver, 14.

This educating of men for the medical profession on the part of the national government is a part of the work of training and educating the soldiers who served in the American Forces during the World War and who received wounds and disabilities that prevented them from working at the same occupations that they worked at before the war. This work is now entering on its last phase, and will terminate, June 30, 1926.

The scope of the work of our government in endeavoring to rehabilitate the disabled soldiers of the World War is realized by few. It has been going on since 1918. A total of 177,823 disabled soldiers have entered on this training and education under the jurisdiction of the national government. These men are from every section of the country and have been trained for almost every conceivable occupation. Some have been enrolled in practically every university, college and school in the country, while thousands of others have been trained "on the job" in the factories and workshops of the country. More than 92,000 have finished their training, have been declared rehabilitated, and practically all of these have been placed in the kind of employment for which trained. Some 25,000 men still remain in training, and, as stated above, several hundred of these are studying medicine. A large number of these will be declared rehabilitated and ready for employment on their graduation from schools and colleges.

The national government's work in connection with the rehabilitating of the disabled soldiers is carried on under the auspices of the United States Veterans' Bureau, a separate department of the government directly under the control of the President. Under the acts of Congress governing this rehabilitation work, it is expected that the bureau will train these men for the vocations which they will be able to perform successfully. When the bureau completes the training of these so-called "disabled veterans" they are in no sense disabled so far as their ability and usefulness is concerned in carrying on in the specific line of work which they have been trained. The government aims to make them able men in their new vocations.

The men that are being trained for the medical profession are students in the best schools of the country. Much thought was given by the bureau to the previous preparation, ability and suitability of these men for the medical profession before they were permitted to begin their course of study. The bureau is proud to report that many of its students of medicine have carried off honor grades in various schools.

It is the duty of the Veterans' Bureau, as provided for under the acts of Congress affecting this work, to secure employment for the men whom it has trained. This duty can be performed only through the cooperation of the general public. One of the brightest spots in the work of the United States Veterans' Bureau is the marked degree of cooperation that has been shown by the employing public in taking into employment the thousands of men whom the government has trained and rehabilitated.

It is especially difficult to find employment for persons that are being trained for the various professions. The bureau feels certain that it is appealing to a most receptive portion of the general public when it asks the members of the American Medical Association to render cooperation and assistance to the government in the employment of men whom it has trained for the medical profession.

As the bureau has branch offices in practically all the large cities of the United States, effective contact can be made by those interested with any one of these offices. The United States Veterans' Bureau, Central Office, Washington, D. C., solicits inquiries and correspondence from members of the medical profession who might consider favorably taking into their offices one or more of these deserving men who are ambitious for success in medicine.

FRANK T. HINES, Washington, D. C.
Director, U. S. Veterans' Bureau.

HOSPITAL COMMITTEE OF NEW JERSEY STATE MEDICAL BOARD REPLIES TO PENNSYLVANIA

To the Editor:—At a meeting of our Hospital Committee, May 30, the secretary presented a copy of a letter written by Dr. William Pepper, dean of the University of Pennsylvania School of Medicine, to THE JOURNAL (published May 30).

The committee feels that he is not in possession of the full facts. He states that the New Jersey board blacklisted every hospital in the state of Pennsylvania because it became annoyed at the fact that recognition had been refused "a certain" New Jersey hospital by the Pennsylvania board. This statement, of course, does not cover the situation. He fails to state that the New Jersey board and Pennsylvania board had had a great deal of correspondence lasting over a year, concerning the hospital situation, and that one conference had been held between committees from both boards, the New Jersey representatives traveling to Philadelphia for the purpose. The Pennsylvania board has taken an arbitrary attitude which it refuses to compromise in any way.

The Jersey City Hospital is an excellent institution, is approved both by the New Jersey Board of Medical Examiners and by the American Medical Association. A young man finished a fifteen months' internship at the Jersey City Hospital in October, 1923, and was refused permission to take the Pennsylvania examinations. He was informed that the Pennsylvania board found that the "Jersey City Hospital gives a fairly good course but that it is deficient in laboratory work as required by the Pennsylvania law." In Pennsylvania, two months' exclusive laboratory work is required. The young man then went to the United Hospital at Portchester, where he had three months of intern work, two months of which were spent in the laboratory. He then went to the Delaware Hospital, where he spent thirteen months, two months of which he spent at laboratory work. After finishing eight months of this additional sixteen months of interning, he applied to the Pennsylvania board for examination and then received a letter which stated that "it would be necessary for you to have two months' *exclusive* laboratory service and training in the technic of x-ray work, sufficient to enable you to handle a machine safely and secure good experience in plate reading. This should be received in one of our approved hospitals in Pennsylvania."

Another young man, who finished his internship, June 1, 1925, and who is a graduate of Jefferson Medical College, has made a statement to the committee that three of his classmates were willing and anxious to serve their internship with him at the Jersey City Hospital, but before doing so wrote to the Pennsylvania board and were informed that the board could give them no promise as to the acceptability of the Jersey City Hospital and advised them to take an internship in Pennsylvania, and referred the writer to the dean of his school for a list of approved hospitals within their state.

There are many other facts which have convinced this committee that the statute under which the Pennsylvania board acts was deliberately sought from their state legislature for the express purpose of holding prospective interns from service in other states and securing them for Pennsylvania hospitals. The result has been to inflict great hardships on the New Jersey hospitals, and hence, on hundreds of patients.

The state board of medical examiners of New Jersey rates its hospitals on questionnaires, on personal inspection and on the rating supplied them by the American Medical Association. It is manifestly impossible for any state board to classify properly any hospital outside its own state and it therefore becomes necessary for each board to accept the classification of the board in the particular state under consideration or to accept the list of hospitals approved by the American Medical Association.

New Jersey, up to May 7, accepted, without question, the ratings of the Pennsylvania board as regards Pennsylvania hospitals, and we only ask that the same courtesy be extended to us. We cannot, however, allow the Pennsylvania board to set itself up as a board superior to the New Jersey Board of Medical Examiners and the American Medical Association for rating hospitals in New Jersey. We feel that when our board classifies a hospital in our own state, it should be accepted by the boards outside our state.

This committee feels that it is a great injustice to any man who has served a general internship in an approved hospital to be refused examination for the practice of medicine and surgery because he may not have had an *exclusive* two months spent in a laboratory.

It is not retaliation on the part of the New Jersey board, as Dr. Pepper states, but simply a matter of self-protection for our own hospitals.

This committee further feels that, while the unjust and arbitrary attitude of the Pennsylvania board has forced the New Jersey board into a defensive position, the young man who has taken a Pennsylvania internship in good faith should not be made to suffer. The committee, therefore, recommends that the resolution of May 7 stand as regards all interns commencing their internships subsequent to May 7, 1925, but that any man who served his internship previous to this date should be allowed to apply for examination, and that his particular application be accepted if all his other qualifications are satisfactory.

We recommend that this change also apply to applications for reciprocity.

Respectfully submitted,
Charles B. Kelley, Chairman.
Charles A. Groves.
J. J. McGuire.

Hospital Committee, N. J. State
Board of Medical Examiners.
Alexander MacAlister, Secretary.
State Board of Medical Examiners of New Jersey.

TETRA-ETHYL LEAD

To the Editor:—Dr. Edward H. Marsh, secretary of the Public Health Council of the New York State Department of Health, has called our attention to an error in our article on Tetra-Ethyl Lead (The Journal, May 16), an error which we wish to correct. We stated that the use of ethyl gasoline had been forbidden in the states of New York and New Jersey subsequent to the outbreak of serious poisoning in the Standard Oil plant in Bayway, and that this prohibition was rescinded after the report of the Bureau of Mines was published. Dr. Marsh informs us that, so far as the state of New York is concerned, no action forbidding the use of ethyl gasoline was ever taken by the health authorities, only the sale and distribution to the public of tetra-ethyl lead in concentrated form. Sale of this compound to refineries, bulk stations and filling stations was permitted, but in sealed containers only. This regulation was passed by the Public Health Council, Jan. 30, 1925, and took effect March 1. Therefore our statement that the use of ethyl gasoline was at first forbidden and later permitted is incorrect.

Alice Hamilton, M.D., Boston.
Paul Reznikoff, M.D., New York.
Grace M. Burnham, New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PREVENTION OF MOSQUITO BITES

To the Editor:—Will you please inform me if you know of any external applicant for the prevention of mosquito bites?

J. F. Riordan, M.D., Berlin, Wis.

To the Editor:—Is there a serum by which a person can be immunized against the poison of mosquito bites? Do you know of anything that will prevent mosquito bites? Citronella, oils and various preparations have not proved valuable. *A. J. Price, M.D., Rochester, N. Y.*

Answer.—No serum has been discovered that will immunize a person against the poison of mosquito bites. Numerous preparations have been recommended to be applied to exposed parts of the body to prevent mosquitoes from biting. Among these are oil of pennyroyal, resorcin monacetate (euresol), various forms of petroleum, and powders and washes simular to the following:

	Gm. or C.c.
Oil of eucalyptus	25
Talc	50
Starch	325
Oil of cinnamon	1
Oil of patchouli	1
Oil of santal	4
Alcohol	to make 400

USE OF BENEDICT'S SOLUTION AS TEST FOR GLUCOSE

To the Editor:—In the literature that I have available, I can find no answer to the following questions, which have been put to me by fellow practitioners and which seem to me pertinent: 1. What is the smallest percentage of sugar in urine that ought to be detected by Benedict's qualitative solution? Can that figure, if it exists, be taken as a standard of the proper preparation of the solution? If not, what can be so taken? 2. With Benedict's quantitative solution, and a urine of less than 2 per cent. sugar, one sometimes gets a loss of color only with no precipitation of the white copper sulphocyanate. Must one get this precipitate, or does the point where all blue disappears indicate the end-point of the reaction? These questions arose here as the result of a variation in the results obtained in the laboratory of the hospital and of individuals. The laboratory prepares its own solutions from pure ingredients according to directions set down in text-books, while the individuals procure their solutions from the drug stores. George S. Silliman, *M.D., Rutland, Vt.*

Answer.—1. According to the statement of Benedict, his qualitative solution will detect glucose in as low concentration as from 0.01 to 0.02 per cent., provided the urine is of low dilution and the test is properly performed. Of importance in this test is the boiling of the mixture, after the addition of the urine, for from two to three minutes and allowing the boiled mixture to stand until cool. If the quantity of glucose is low (below 0.3 per cent.), the characteristic precipitate forms only on cooling. While there is probably no absolute figure that may be stated as a standard of the proper preparation of this solution, if a 0.3 per cent. glucose solution fails to react, especially after cooling, it is very probable that something is wrong with the solution iself.

2. In the use of Benedict's quantitative test for sugar, the complete decolorization of the solution is taken as the end-point of the reaction; but the heavy white precipitate of cuprous thiocyanate should form before the decolorization is complete, as this compound is a reduction product of the cupric thiocyanate originally in the solution. If this white precipitate of the cuprous thiocyanate is not obtained, provided glucose is present, there is probably something faulty with the solution.

THE WILKENS-FIRST CANCER CURE

To the Editor:—Will you kindly give me what information you have in regard to Dr. F. H. First of Rock Island, Ill., who claims to be able to remove cancers by plaster? I have a patient who is desirous of trying the plaster treatment.

S. H. G., Michigan.

Answer.—We have in our files some literature that has been sent out during the last ten years by an advertising "cancer cure" quack, one J. K. Wilkens of Muscatine, Iowa, a town that is about 30 miles from Rock Island, Ill., where Dr. F. H. First practices. Ten years ago we began to receive inquiries about Wilkens and his "cure," which, apparently, is an escharotic paste. Wilkens is not a physician. We understand that he used to charge, if he does not still, from $150 to $300 for his alleged cure and, like most of his ilk, claimed that he did not use the knife or any other instrument. Some years ago we learned that Wilkens had informed some of his prospective victims that his treatment was endorsed by Dr. F. H. First and used in a hospital in Rock Island. A letter was written to Dr. First asking for the facts in the case. He replied, admitting that he was using the Wilkens' preparation and was "about convinced that in this ointment we have a treatment that surpasses surgery in the cure of cancer." He stated, further, that he had had some cases that "were refused operation, as they were past help, and they are well now and have been for some time." Another letter was written to Dr. First stating that it was assumed that he knew the composition of the product he had been using and that as Wilkens himself gave no information on this point, it would be desirable to pass on to the medical profession information regarding the composition of the ointment which "surpasses surgery in the cure of cancer." Dr. First replied that until such time as he could "report a list of cured cases" he could "see no reason to make the treatment public." This was in 1917, eight years ago. So far as we have been able to learn, Dr. First has never reported a list of cured cases nor given the profession the formula. Incidentally, a Rock Island paper in October, 1918, reported that Dr. F. H. First of that city had discovered and had for some time been using a serum for influenza "that has proven successful in almost every instance."

RINGER'S SOLUTION — ISOTONIC SOLUTIONS

To the Editor:—For some time past I have been using the following formula for irrigating the nasal fossae and have found it grateful to patients: Sodium chlorid, 9 gm.; sodium bicarbonate, 1 gm.; potassium chlorid, 0.1 gm.; calcium chlorid, 0.1 gm. By adding the ingredients mentioned to a quart of water I have considered the resulting solution isotonic, with the blood and similar to Ringer's solution.

I notice that Ringer's original solution contained no sodium bicarbonate. Is this formula now considered Ringer's solution and isotonic with the blood? If any drug houses are putting out tablets or powders of this formula so that one tablet or one powder to a quart of water will make the proper solution, please let me know.

C. Norman Howard, M.D., Warsaw, Ind.

Answer.—When a solution is isotonic with the blood, it has the same osmotic pressure as that of blood (this varies often, depending, for example, on whether it is referred to frog's tissues, or to mammalian tissues). The official physiologic solution of sodium chlorid is isotonic with the blood, though containing only one ingredient.

In work, particularly on excised tissues, the deleterious effects of single salt solutions have led to the introduction of solutions containing other ions, thus better adjusted to the physiologic requirements. These balanced solutions are of less importance for injections in living animals, in which even single salt solutions are rapidly adjusted by exchange with the tissues and tissue components.

The mixture employed by our correspondent is slightly hypertonic. The formula for Ringer's solution usually given in textbooks is:

Sodium chlorid	0.7	per cent.
Potassium chlorid	0.03	per cent.
Calcium chlorid	0.025	per cent.

It has been shown, however, that if such a solution is made slightly alkaline, it offers a still more favorable medium for the heart. As used in physiologic laboratories when adapted to frogs' hearts, the following formula is employed:

Sodium chlorid	0.6	per cent.
Potassium chlorid	0.0075	per cent.
Calcium chlorid (dried)	0.01	per cent.
Sodium bicarbonate	0.01	per cent.

For mammalian purposes, a concentration often used is:

Sodium chlorid	8.5 gm.
Potassium chlorid	0.3 gm.
Sodium bicarbonate	0.2 gm.
Calcium chlorid (crystals)	0.2 gm.
Water	1,000 c.c.

The formulas for Ringer's solution vary in minor details, according to different sources.

In making a Ringer's solution containing both sodium bicarbonate and calcium chlorid, the sodium bicarbonate must be completely dissolved before adding the calcium chlorid (also dissolved in water) to avoid precipitation. Obviously, therefore, it would be incompatible to have these ingredients in a single powder or tablet. A number of pharmaceutical manufacturers do carry a "Ringer's Tablet" in which there is no sodium bicarbonate. These are intended for use in preparing isotonic solutions of certain local anesthetics.

EFFECT OF ALTITUDE ON HIGH BLOOD PRESSURE

To the Editor:—Can you give me an idea of the effect of altitude (7,000 feet) on high blood pressure of moderate degree with a mitral murmur?

Paul R. Howard, M.D., Kewanee, Ill.

Answer.—With each increase in altitude there is a corresponding decrease in oxygen pressure, which means a less amount of oxygen by weight per unit volume of air. To supply the needs of the tissues for oxygen, this decrease in the oxygen available with each respiration must be compensated for by an increased minute volume of inspired air, by an increased minute volume of blood delivered by the heart, and to a less important extent by an increase in the oxygen carrying power of the blood, effected by an increase in the number of circulating red corpuscles. The type of response varies with individuals. In some, the respiratory response will outweigh the circulatory, and in some there may be a relatively less respiratory response, necessitating a relatively increased circulatory response.

The circulatory response is brought about by an increase in the pulse rate, to a less determinable extent by an increase in the volume per beat, and by a peripheral vasodilatation, to accommodate the increased flow.

The circulatory response again varies with individuals. Normally there is very little acceleration of the pulse before 8,000 feet, and no increase in blood pressure before 10,000 feet or higher. In some persons the pulse may accelerate at a much lower level, or the peripheral vessels not dilate normally, and the blood pressure rise at a lower level, or show a more marked rise than normal.

Those living at high altitudes show the same blood pressures as those at sea level, and a normal person going from sea level to 7,000 feet would show little or no change in pulse rate, and no change in blood pressure.

In considering any given case in which there is a possibility of existing cardiac or arterial pathologic changes, weight must be given to the following points: The heart has more work to do at a higher altitude. The particular person may have a respiratory response less than normal, necessitating a relatively greater circulatory response. The peripheral vessels may not dilate normally to accommodate the increased flow, and there may be a rise in blood pressure at a lower level. Patients with heart disease in the air service frequently showed an abnormal response, depending on the condition of the heart and vessels. Cases are encountered clinically in which a previously damaged heart becomes worse at a moderately high altitude.

SWIMMING POOL CONTROL

To the Editor:—I am contemplating building a private swimming pool, on a country place, 40 by 60 feet. What is the cheapest and most efficient method of keeping the water pure? Replacing the water frequently would be out of the question.

A. J. Simpson, M.D., Chillicothe, Mo.

Answer.—The four chief methods of swimming pool disinfection are by means of ultraviolet ray apparatus, chlorin, ozone or by changing the water daily. Of course, it is almost useless to empty and refill a pool each day unless care is taken to clean the pool when empty. As our correspondent points out, replacing the water frequently would be out of the question. For the type of pool described, the chlorin method of treatment would be probably the most satisfactory. The efficiency of the chlorin will depend, of course, on the composition of the water (particularly the amount of organic matter present) and the strength employed.

References to swimming pool control are as follows:

Disinfection of Swimming Pools, The Journal, Sept. 25, 1915, p. 1129.

Ravenel, M. P.: Hygiene of Swimming Pools, The Journal, Oct. 19, 1912, p. 1424.

Whittaker, H. A.: Investigations on Swimming Pools at University of Minnesota, The Journal, June 22, 1918, p. 1901.

Manheimer, W. A.: Reliability of Ozone in Swimming Pool Disinfection, The Journal, June 29, 1918, p. 1991.

Purification of Swimming Pools, Current Comment, The Journal, April 20, 1918, p. 1163.

Sanitation of Swimming Pools, The Journal, Oct. 11, 1919, p. 1153.

Craster, C. V.: Outdoor Pool: Obvious Need for Clear Pools, *Am. J. Pub. Health* **9**: 823 (Nov.) 1919.

Robinson, J. W.: Fallacy of Usual Tests for Swimming Pools, *California State J. Med.* **20**: 60 (Feb.) 1922.

Simons, G. W., Jr.: Sanitary Control of a Public Swimming Pool, *Am. J. Pub. Health* **11**: 234 (March) 1921.

Fair, G. M.: Inferential Index of Swimming Pool Purity, *Am. J. Pub. Health* **10**: 502 (June) 1920.

Manheimer, W. A.: Comparison of Methods of Disinfection of Swimming Pools, *J. Infect. Dis.* **20**: 1 (Jan.) 1917.

Some Factors in Control of Swimming Pools, *J. Infect. Dis.* **21**: 484 (Nov.) 1917.

Manheimer, W. A.: Application of Ozone to Purification of Swimming Pools, *Pub. Health Rep.* **33**: 267 (March 1) 1918.

Manheimer, W. A.: Standards for Legislation of Swimming Pools, *M. Rec.* **93**: 418 (March 9) 1918.

Manheimer, W. A.: Reliability of Ozone in Disinfection of Swimming Pools, The Journal, March 16, 1918, p. 799.

Smith, C. E., Jr., and Schoberg, H. M.: Preliminary Survey of Local Conditions in Sanitation of Swimming Pools, *Am. J. Pub. Health* **8**: 424 (June 1) 1918.

Sanitary Swimming Pools and Their Control, editorial, The Journal, Dec. 2, 1916, p. 1676.

Levine, M.: Sanitary Control of Swimming Tank, *J. Infect. Dis.*, March, 1916.

Problem of Sanitary Swimming Pools, editorial, The Journal, April 1, 1916, p. 1028.

Thomas, S. J.: Disinfection of Swimming Pools, The Journal, Sept. 25, 1915, p. 1104.

Literature on Hygiene of Swimming Pools, The Journal, Nov. 16, 1912, p. 1812.

Crane, A. M.: Swimming Pool Standards: Uniform and Practicable Regulations, *Nation's Health*, February, 1924.

Lyster, W. J.: Hygiene of the Swimming Pool, The Journal, Dec. 16, 1911, p. 1992.

Sanitation of Swimming Pools, *American Homes* (supplement) **9**: 20 (April) 1912; *Scient. Am. Supplement*, Jan. 27, 1912, p. 59.

Tully, E. J.: Hygiene of Swimming Pools, *Am. J. Pub. Health*, March, 1912.

Porter, H. F. J.: Menace of the Bathing Pool, *Survey*, July 27, 1912, p. 588.

PILOCARPIN IN URTICARIA

To the Editor:—1. Is pilocarpin used in urticaria? 2. Have fatalities been reported in the use of the drug? 3. Where can I obtain a description of Professor Heilner's treatment of arteriosclerosis with aortic substance?

Henry Kendall, M.D., New York.

Answer.—1. R. Ghosh in his Materia Medica and Therapeutics, Calcutta, 1925, states that pilocarpin has been used with some benefit in urticaria. Sollmann, Cushny and the U. S. Dispensatory do not mention this drug in connection with urticaria. Pusey, Sutton and Schamberg, in their books on the skin, mention pilocarpin for use in urticaria.

2. We find in recent literature no record of fatalities from the use of pilocarpin. Pharmacologists warn against its use in pulmonary diseases, and point out that it causes death by paralysis of the heart or edema of the lungs.

3. We have no record of "aortic substance" or of its use in arteriosclerosis. There are, however, two articles by E. Heilner on Arteriosclerosis:

Causal Treatment of Arteriosclerosis, *München med. Wchnschr.* **68**: 443 (April 5) 1921.

Causal Treatment of Arteriosclerosis, *München med. Wchnschr.* **67**: 501 (April 30) 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13. Ch., Dr. Samuel W. Welch, Montgomery.

Connecticut: Hartford, July 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

Connecticut: New Haven, July 14. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

District of Columbia: Washington, July 14. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

Hawaii: Honolulu, July 13. Sec., Dr. G. C. Milnor, 401 S. Beretania St., Honolulu.

Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, 333 State House, Indianapolis.

Massachusetts: Boston, July 14-16. Sec., Dr. Charles E. Prior, 144 State House, Boston.

Philippine Islands: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

South Dakota: Deadwood, July 21. Dir., Dr. H. R. Kenaston, Bonesteel.

Arizona April Examination

Dr. W. O. Sweek, secretary, Arizona Board of Medical Examiners, reports the written examination held at Phoenix, April 7-8, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, including one osteopath, all of whom passed. Seven candidates were licensed by reciprocity, and three by endorsement of their credentials. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
College of Medical Evangelists	(1922)	91.2
University of California	(1923)	86.1
Dartmouth Medical School	(1908)	78.1
Osteopath	(1914)*	....

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1917)	Wisconsin
Tulane University	(1921)	Louisiana
Creighton Medical College	(1921)	Nebraska
University of Pennsylvania	(1916)	Penna.
University of Nashville	(1903)	W. Virginia
University of Tennessee	(1905), (1919)	Tennessee

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
McGill University, Montreal	(1921)	Canada
School of Medicine and Pharmacy of Jalisco, Mexico	(1915)†	Mexico
University of Tomsk, Siberia, Russia	(1913)†	Russia

* Granted license to practice medicine and surgery.

† Graduation not verified by the American Medical Association.

Connecticut March Examination

Dr. Robert L. Rowley, secretary, Connecticut Board of Medical Examiners, reports the written examination held at Hartford, March 10-11, 1925. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 12 passed and 9 failed. Five candidates were licensed by endorsement of credentials. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Georgetown University	(1924)	82.1
Yale University	*(1924)*	*82.2*
University of Maryland	(1924, 2)	80.0, 86.1
Harvard University	*(1923)*	90.4
Tufts College Medical School	*(1923)*	*78.3*
University and Bellevue Hospital Medical College	*(1910)*	*76.4*
University of Buffalo	(1924)	76.6
Jefferson Medical College	(1924)	78.8
McGill University	(1922)	79.5
Queen's University	*(1922) 77.6, (1924)*	*79.2*

College FAILED	Year Grad.	Per Cent.
Tufts College Medical School	(1924)	70.4
Fordham University School of Medicine	(1916)	68.6
McGill University	(1924)	71.0
University of Montreal	(1924)	66.0
University of Naples, Italy	*(1919)* 25.8, (1921)* 55.1,* (1922)*	62.4
University of Pecs, Hungary	(1923)*	69.6
Donskey University, Russia	(1920)*	66.1

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
College of Physicians and Surgeons, Chicago	(1907)	Illinois
Medical College of Indiana	(1905)	Indiana
Johns Hopkins University	*(1917)* Maryland, (1920)	Maryland
University of Virginia	(1920)	Maryland

* Graduation not verified by the American Medical Association.

Book Notices

The Microscope. An Introduction to Microscopic Methods and to Histology. By Simon Henry Gage. Dark-Field Edition (14th). Cloth. Price, $3.50 net. Pp. 517, with 275 illustrations. Ithaca, N. Y.: The Comstock Publishing Company, 1925.

This book opens with interesting discussions of the parts of the microscope and proceeds on through its manifold uses to such exacting problems as measuring by means of the microscope, drawing by the aid of photography and the use of the microspectroscope. The large chapter on dark field microscopy gives this, the fourteenth edition of the book, its name, the dark field edition. Improvements discussed include (1) the single objective binocular for all powers of the microscope, (2) the perfection of photographic light filters and dry plates sensitive to the whole spectrum, (3) the glass filter used with a Mazda lamp giving light of daylight quality, and (4) a dark field illuminator for all powers of the microscope. The author considers these advancements aids to furnish material for interpretation. He said long ago: "In considering the real greatness of the microscope and the truly splendid service it has rendered, the fact has not been lost sight of that it is, after all, only an aid to the eye of the observer, only a means of getting a larger image on the retina than would be possible without it. The appreciation of this image must always depend on the character and training of the appreciating brain behind the eye."

The Extra Pharmacopoeia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B., D.P.H. Eighteenth edition. In two volumes. Vol. I. Boards. Price, 27 shillings 6 pence net. Pp. 1163. London: H. K. Lewis & Co., Ltd., 1924.

Probably no other commentary on drugs printed in a foreign country is so well known in the United States. The popularity of the work in Great Britain is attested by this, the eighteenth edition. Every page (exclusive of the index) of the first volume of the new edition is filled with critical information useful alike to the physician, pharmacist, analytic chemist, dentist, and manufacturer of pharmaceuticals or chemicals. The latest information on the newer drugs such as benzyl succinate, butyn, mercurochrome-220 soluble, synthetic cocain, carbon tetrachlorid (in hookworm disease) and bismuth compounds (in syphilis), is given in condensed form. References are given throughout which render the book valuable to the research worker. Some concept of the scope of the work may be obtained from the index and posologic table, which lists about 10,000 items, occupying ninety-two pages of two columns each. While this work may not be expected to displace the U. S. Dispensatory in this country, the amount and variety of succinct information that it contains renders it extremely useful to American workers.

Ueber den Schlaf des Kindes. Von Dr. Paul Karger, Privatdozent für Kinderheilkunde an der Universität Berlin. Abhandlungen aus der Kinderheilkunde und Ihren Grenzgebieten. Beihefte zum Jahrbuch für Kinderheilkunde, Herausgegeben von A. Czerny. Heft 5. Paper. Price, 2.40 goldmarks. Pp. 50, with 48 illustrations. Berlin: S. Karger, 1925.

The author studied only one phase of sleep—spontaneous muscular activity. By means of a simple lever device attached to one of the legs of the bed he was able to record continuously every movement of the sleeping child. The conclusions drawn from nearly 300 such sleep "actograms" are of interest not only to the pediatrician and physiologist, but to all those who are in any way concerned with child hygiene. The age of the children varied from 2½ to 12½ years, and they did not know that their sleep was being studied. The author considers the absence of motor activity as an indication of the depth of sleep. He found that during the first hour of sleep the movements were very pronounced, but were absent during the rest of the sleep. Waking the child in the middle of the night resulted in continuous activity during the remainder of the night. Home work done in the evening, playing with toys just before going to bed, and fairy tales at bedtime resulted in a very disturbed sleep. Putting a child accustomed to sleep alone into a room with other children increased its motor activity. Variations in temperature and light had no effect on the character of the "actogram." Hypnotics, with the exception of potassium bromid, did not decrease the motor activity during sleep, when given in therapeutic doses. Large doses producing narcosis abolished all movements. Phenobarbital seemed to have a delayed narcotic action. Atropin and caffein medication caused continuous activity throughout the entire night. Sleep was very light and disturbed in children suffering from epidemic encephalitis. Curiously enough, sleep was found to be quiet in fever, but the child was restless the following night, after its temperature was lowered by the administration of amidopyrin. Hunger, strangely, resulted in quiet sleep, whereas feeding increased the motor activity. The value of the control experiments is somewhat decreased by the fact that the "actograms" of the same child taken on consecutive nights varied from each other to a considerable extent. Interpretation of the results is rendered all the more difficult because no perfectly healthy children were employed in this study.

An Introduction to Organic Chemistry. By Alexander Lowy, Ph.D., Professor of Organic Chemistry, University of Pittsburgh, and Benjamin Harrow, Ph.D., Associate in Physiological Chemistry, College of Physicians and Surgeons, Columbia University. Cloth. Price, $3. Pp. 389, with illustrations. New York: John Wiley & Sons, Inc., 1924.

This brief, readable textbook of organic chemistry is designed to cover both the theory of organic chemistry and some of the applications, especially those related to medicine, dentistry, pharmacy, agriculture and the biologic sciences. The volume does give a somewhat comprehensive view of the field as outlined; but, obviously, to cover all of the material in a rather limited space, the discussion on individual topics must be abbreviated somewhat. For instance, the reactions of the Grignard reagent are given incidentally in the chapter on alcohols: four equations are given; two are type reactions and two are reactions illustrating specific examples. Subjects of a physical organic nature, such as the relation between structure and physical properties, are almost unmentioned. The equations are given in large type and are easy to follow. Whenever the benzene nucleus is involved, a hexagon represents it. This takes up considerable space, but the clarity is enhanced and the assimilation of the material is made easier. Reading references are given at the end of many of the chapters. This list is supplemented by a larger bibliography at the end of the book.

Laboratory Diagnostic Methods. Pathological, Bacteriological, Serological and Chemical. A Manual for Physicians, Medical Students and Laboratory Technicians. By John A. Kolmer, Professor of Pathology and Bacteriology in the Graduate School of Medicine of the University of Pennsylvania, and Fred. Boerner, Associate in Bacteriology in the Graduate School of Medicine of the University of Pennsylvania. Cloth. Price, $2.50. Pp. 338. New York: D. Appleton & Company, 1925.

On the odd numbered pages of this book are concise statements of the technic of laboratory tests. The first section covers clinical pathologic methods. It is a revision of Pepper and Klaer's Manual on Clinical Pathology, which twelve years ago was revised by Pepper and Kolmer for use in the University of Pennsylvania School of Medicine. The second section covers bacteriologic methods, and the third section covers serologic methods. There are no illustrations and no discussions of the value of the tests in diagnosis and treatment. The book is a comprehensive collection of technical methods which will be especially convenient for physicians who are familiar with laboratory work.

Die Chirurgie. Eine Zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Unter Mitarbeit hervorragender Fachmänner herausgegeben von Prof. Dr. M. Kirschner, und Prof. Dr. O. Nordmann. Paper. Lieferung I (I. Band). Price, 16 marks. Pp. 396, with 193 illustrations. Lieferung 2 (III. Band). Price, 18 marks. Pp. 386, with 216 illustrations. (Sold in sets only.) Berlin: Urban & Schwarzenberg, 1925.

"Surgery," edited by Kirschner and Nordmann, when finished, will be a six volume system covering the field of general surgery and the surgical specialties. The aim of the editors is to consider under one heading anatomy, pathology, clinical course and surgical technic. The system is offered to the public in novel fashion. As the manuscript of any one chapter or group of chapters is obtained, it is published as a section. These sections are to appear monthly. No attempt has been made to issue the sections in the sequel of the finished work. Whenever a section is issued which, with some of those already published, completes a volume, an adjustable binder is furnished. In this manner the publishers expect to have the system completed in about two years. Section 1 comprises the first half of Volume I and Section 2 about the same proportion of Volume III. Section 1 deals with general surgical topics, such as the history of surgery, anesthesia, the roentgen ray and radium. Section 2 contains the chapters on surgery of the lymph glands, surgery of the breast, surgery of the thyroid and other glands of internal secretion, and surgery of the hypophysis. Judging from Section 2, this system of surgery will be a valuable addition to surgical literature. The subjects are taken up in a most careful, systematic and detailed manner. Anatomy, pathology, clinical course, operative procedures and technic, are dealt with thoroughly. The illustrations in black and white and especially those in color are good, and a bibliography is appended to each chapter. The difficulty in judging the worth of the completed system from the few chapters at hand is obvious. Section 2, however, gives rich promise for the excellence of the finished work.

The Nurse and the Family. *A Visiting Nurse's Handbook for Teaching the Members of the Family the Simpler Phases of Bedside Care and Personal and Home Hygiene. Paper. Pp. 122. New York: Metropolitan Life Insurance Company, 1925.*

The visiting nurse as a teacher is the theme of this attractive booklet. A large amount of plain information is included, in an orderly arrangement. Although this knowledge is already familiar to the properly educated public health nurse, the book may be useful to her to recall how elementary her instruction should be to reach the understanding of the patient's family. The teaching embraces the care of the patient and the safety of the family and community.

Die Augenerkrankungen des Kindesalters in ihrer Besonderheit. Von Dr. L. Heine, o. ö. Professor und Direktor der Universitäts-Augenklinik in Kiel. Abhandlungen aus der Kinderheilkunde und ihren Grenzgebieten. Beihefte zum Jahrbuch für Kinderheilkunde, Herausgegeben von A. Czerny. Heft 6. Paper. Price, 3 goldmarks. Pp. 52, with 9 illustrations. Berlin: S. Karger, 1925.

This is undoubtedly the elaboration of a series of lectures before a pediatric society. Although the entire subject matter and some rather indifferent illustrations are here contained within the small compass of a brochure, the complete range of ophthalmology in children is covered most thoroughly, not from the ophthalmologic nor yet from the pediatric standpoint, but rather from the symptomatological and etiologic points of view. The various diseases that may affect the various parts of the eye are mentioned and described most briefly, and the etiologic phase of each discussed somewhat more at length. The necessity of accurate refraction in school children occupies a prominent position, and brief directions for determining whether a gross error of refraction exists are given. The question of muscular anomalies is handled in a firm and sensible manner. Among the finer points of the book are the only too few pages devoted to a discussion of the etiologic importance of scrofulosis (in the sense as used by Czerny), tuberculosis and syphilis, especially of the hereditary type. A comparison is made between the importance of these three diseases as etiologic factors of ocular disease in children and in adults. The author has suceeded in condensing into a comparatively few pages the essentials of ophthalmic disease in children and, as a result, this booklet should form a part of the working library of every medical man who has to deal with children's diseases.

A Treatise on Hygiene and Public Health. *With Special Reference to the Tropics.* By Birendra Nath Ghosh, F.R.F.P. & S., Examiner in Hygiene and Pharmacology, University of Calcutta. Fifth edition. Cloth. Price, 9 shillings 6 pence net. Pp. 586, with 99 illustrations. Calcutta: Hilton & Company, 1924.

This is a fifth edition of a book first published in 1912. The discussions include all phases of public health work from the standpoint of conditions existing in India. Most of the discussions are brief, but down to date. The book will be useful as a reference volume for those interested particularly in conditions in tropical countries.

Miscellany

CHEMISTRY IN THE SERVICE OF PHARMACEUTICAL MEDICINE*

PAUL NICHOLAS LEECH, PH. D.
Director, American Medical Association Chemical Laboratory
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Twenty years ago, chemistry was as a June graduate. Today, chemistry is mature, self-supporting and highly respected. It has reached this position of scientific affluence by its attainments not only in its own province, but also in its interdependencies, including pharmaceutics and medicine. Two decades ago chemistry, trembling, awed, was confronted with theories too fundamental in character to be ignored and by practical problems of vast importance economically. From Denmark had come the Tablets of Stone of the genius Arrhenius, commanding chemists to follow the laws of electric charges, the theory of ions, in order to blast new trails. This in itself was no easy dictum. Equally insistent were the physicists with their applications of electricity; the remarkable findings of Roentgen and the astonishing facts of atomic disintegration presented by the Curies with their work on radium—all had to be adopted. Nor were the practical problems less difficult. There were urgent orders for new chemicals; the automobile industry was demanding new methods of processing steel; the ceramic industry, the oil, the paint, the rubber industries, and a host of others were finding they could no longer make progress by relying on empiricism alone. Almost every endeavor of human progress was looking toward the science of chemistry for aid. Chemistry—baccalaureate chemistry—faced no easy pioneering. It was thus in both Europe and America. But here there were even other demands: public health was receiving unusual attention. The Food and Drugs Act, which was to call for the services of hundreds of chemists and still more for the devising of accurate analytic methods, was being agitated in Congress. To medicine manufacturers the period may be looked on as a mile-stone marking the beginning of a new era of pharmaceutical progress; one which I am sure has been more than welcomed by the representative manufacturers.

It was at this same period, too, that organized medicine created the Council on Pharmacy and Chemistry, to be followed shortly by the installation of the A. M. A. Chemical Laboratory. The chemistry which was aiding agriculturists, which was recreating industry, which was providing the stimulus for university research, was also being called on to advise in the battle against disease. It was to become the pilot to many of the pharmaceutical manufacturers, the adviser to the medical profession, and the watchman of public health. In that field common to both the pharmaceutical manufacturer and to us, what were the conditions as seen in 1905? The domination of Germany in chemical manufacture was supreme. Synthetics were being popularized, the American physician and the laymen alike revering the new synthetics from abroad. They were being introduced in large numbers. As has been said before, it seemed that if a coal tar derivative could not find a place as a dye per se then it surely must have some inherent quality to justify its use as a drug. Synthetic medicinal chemistry in America was neglected. The average American pharmaceutical house either marketed the German drugs in order to make its catalogue complete, or prepared decoctions and tablets mainly from plant substances. In the case even of the remedies sold to physicians, frauds were not altogether uncommon, deception

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* Address before American Pharmaceutical Manufacturers Association, White Sulphur Springs, W. Va., June 23, 1925.

—unintentional or intentional—was rampant, and medical journal advertising teemed with statements concerning the composition of remedies which any chemist familiar with medicines would know were untrue. Such were the conditions as first surveyed by the A. M. A. Chemical Laboratory.

But it has been the fortunate privilege of the A. M. A. Chemical Laboratory to note the improvement wrought year by year by the earnest men of both the medical profession and the pharmaceutical industry. What were the products about which organized medicine sought chemical information as soon as its laboratory was functioning? A good example is "Atoxyl"—the magic drug of that hour. Its chemical composition was presumably declared, but the claims made for it could not go unchallenged. The composition was shown to be wrong, the product not constant from lot to lot, and the declaration of maximum arsenic administration was found faulty when subjected to chemical scrutiny. Be it said to the credit of the firm, however, that when the evidence was shown, the claims were modified. Looking from our perspective today, the criticism is not that these claims in themselves were made, but that the manufacturer of a *chemical* did not have adequate *chemical* advice. "Atoxyl," I believe, was conscientiously exploited; that is, the claims were made in good faith; but if the same claims were made for a similar product today, we would not be so charitable in the statement, because now there is no excuse whatever for lack of competent scientific advice. A more widespread evil was the ethical proprietary with the "paper chemistry formula," impressive, decorative, reflecting discredit on both the house that promoted it and the physician who prescribed it. The frauds, too, were present; it is only necessary to recall such chemical jokes as zyme-oid and capudine, and others which found the laboratory third degree quite distasteful, though the therapeutic claims cannot be considered so flippantly.

THE INTERMEDIATE PERIOD

By 1915, ten years later, the change that had taken place was indeed encouraging. Better preparations had been introduced with due consideration of the chemistry. Frauds were relatively rare: only one real outstanding fraud in drugs sold to physicians (I am not speaking of the "patent medicines") do I remember—Syphilodol, the wonderful French antisyphilitic extensively advertised by appealing to the patriotic sentiment and cordial entente between France and the United States. The ampules, beautifully encased, contained nothing more potent than water.

The false statements concerning the composition of many remedies, particularly when made in ignorance, had been modified. There still were a goodly number of secret remedies—so-called ethical proprietaries—which required the attention of the analytic chemist, although their number was lessening.

But the period of greatest stress was during the war. The shortage of German synthetics had to be met, and met it was, but not without difficulty. With praiseworthy efforts, many firms arose to meet this peculiarly chemical emergency. The troubles that occurred in the plants can be told only by those actually engaged in the work at that time, yet it was more than evident that a struggle was going on—lack of competent help, lack of experience. To illustrate: One firm, particularly well known for its excellent work in drug manufacture today, was so handicapped that the A. M. A. Chemical Laboratory had to show the firm the method of making the correct analysis before it could proceed with a satisfactory synthesis. Notwithstanding the hardships, the creative genius of Americans, irrespective of their calling, was evident; again necessity was the mother of invention. It was the privilege of the A. M. A. Chemical Laboratory at this time to aid the Federal Trade Commission, the National Research Council and the Chemical Foundation by passing on the products to be licensed. The Laboratory's aims were to require that the product should not be so pure as to work undue hardship on the American manufacturer, yet to be sufficiently pure to meet the after-the-war competition of the German synthetics. Improvements were suggested which were gladly accepted. In the case of Cinchophen, I well remember how specimen after specimen came in as the process was being improved, until finally a product of sufficient purity was obtained. It was with satisfaction that one noticed this concern or that obtaining the services of men well grounded in fundamentals of science and with high ideals. And their efforts have been reflected in their products. The German supremacy in drug chemistry is no more. Better yet, the example of the Germans has not been followed. The flood of synthetics seems to be an incident of the past. American pharmaceutical chemists are putting out fewer products, with greater likelihood of permanent merit. The work is more thorough. Today there is no foundation in fact for the claim that American chemists cannot make as good products as those imported from abroad.

During the last ten years—the second decade—the A. M. A. chemists have investigated practically all of the better class of drugs placed on the market. In the large majority of instances the product as submitted was all that could be desired *chemically;* its constitution was well worked out, the purity high and the method of assay satisfactory. In some other instances, suggestions for improvement were made which were put in effect. Of course, there were some products to which the Laboratory's attention was called which were far from being what they were claimed chemically. Fortunately, these were not representative products and generally were promoted as lone specialties of a small concern. The products being offered now show that the "June graduate chemist" of 1905 has not ignored his newer conceptions of chemistry; he has applied them to his task and elaborated noteworthy chemotherapeutic agents. (Incidentally, he has increased the difficulties of the chemists serving organized medicine.) The contributions of anesthetics, antiseptics, arsenicals, medicinal dyes, complex diagnostic agents—all these attest the ingenuity of modern chemistry in the service of medicine.

OPPORTUNITY FOR FURTHER IMPROVEMENTS

The pharmaceutical purveyers, however, are in position to cause some still needed improvements. It is unfair to the better class of firms that there is a group willing to market products of inferior grade, or, worse still, to dispense tablets or preparations that do not contain the declared amount of ingredients, notwithstanding the Food and Drugs Act of 1906. That this is occurring yearly can easily be pointed out by referring to the successful prosecutions instigated by the Bureau of Chemistry.

There is opportunity for improvement in the methods of introducing a drug; to illustrate, in how much better taste was the careful and mature announcement of the chemical work on tryparsamide and insulin than the premature, press-agented story on intarvin. Yet intarvin is of unusual academic chemical interest.

The advertising departments of the pharmaceutical firms, it seems to me, could well afford to cooperate more closely with the scientific workers before copy is sent broadcast. Many of the difficulties that have been dealt with by the Council on Pharmacy and Chemistry and the Chemical Laboratory can be traced to the copy writer. In a recent case at issue, three letters concerning the composition of a product were answered, and answered misleadingly, by the advertising department without once referring the inquiry to the scientific department. The result was a gross deception innocently perpetrated, yes, but inexcusably perpetrated. It is the duty of the A. M. A. Chemical Laboratory to inform the medical profession concerning the composition of drugs. In line with this, the Laboratory published the findings about the product; the firm, quite chagrined, has seen the error and has ordered that in the future all inquiries and even advertising material of such nature must receive the approval of the scientific department, which should have been done at first.

Then take the proposition of names—trade names, therapeutically suggestive names, chemical names that hide the active ingredient. It has been shown in case of the leading drugs of today that names indicative of composition can be coined and used successfully—mercurochrome, butyn, salvarsan or arsphenamin—and many others, names that are distinctive and with a scientific background; yet there are some firms which jeopardize the introduction of a meritorious substance by endowing it with either a foolish name or a therapeutically suggestive name. Also, one needs but pick up many catalogues and note the therapeutic names for various mixtures, particularly tablets, not at all in keeping with the scientific spirit—Antispasmodic Tablets, Carbuncle Ointment, Sciatica Tablets, Brain Sedative and what not. On the other hand, it is gratifying to note that for many years a few houses have listed their tablet mixtures under the correct scientific name.

A suggestion, which has emanated from the pharmaceutical organizations but which has not been adopted generally, is the simplification of the number of dosage forms. Why should there be from thirteen to fifteen different dosages for tablets of arsenous oxid? Does it reflect credit for a firm to clutter up its catalogues with practically every remedy possible simply to appear complete? And not quite so bad, but which in the end is just as futile, is the useless duplication of drugs, the oustanding example of which today is the host of barbital derivatives. Certainly it is time for the needless products to be discarded.

In this discussion and particularly the suggestions—suggestions made in the spirit of helpful criticism as seen by the A. M. A. chemists—only chemical questions have been involved. Many believe, I have no doubt, that there is still need of modifying therapeutic claims. This is a matter not within the purview of the Chemical Laboratory, a problem that has been dealt with intelligently by the Council on Pharmacy and Chemistry. It may not be amiss to state, however, that a comparison of present day advertising, particularly in medical journals, with that of two decades ago points out more eloquently than words the cooperation the Council has received from the medical profession and progressive pharmaceutical manufacturers. But even so, the matter of therapeutic claims—claims not properly substantiated—still remains the chief task of the Council and of the pharmaceutical house that desires its propaganda to be looked on with favor.

FUTURE CHEMICAL WORK

The manufacturer and the pharmaceutical chemist both may inquire in what direction chemotherapeutics is to be furthered. What should be the future tendency of chemistry when enlisted in the service of pharmaceutical medicine?

The present tendency of modern investigators has been in the main copied from two men—Pasteur and Ehrlich. The wonderful accomplishments of Pasteur published fifty years or so ago have been so far reaching in influence and so highly valuable that his work today stands paramount; it may well be questioned whether any single human life has rendered more beneficent service to mankind. The chemists, however, forsook Pasteur—Pasteur the chemist—and allowed others to form a profession distinct from chemistry, and to carry on the remarkable observations of Pasteur with microorganisms. The bacteriologists claim credit, justly too, for such monuments to human progress as smallpox virus, diphtheria antitoxin and typhoid vaccine. Considered from the chemist's point of view, however, bacteriology has gone about as far as it can. There has been developed a system of fine technic; the life cycle of the organisms as seen under the microscope has been reported with irreproachable accuracy; methods of distinguishing groups, types, strains, have been accurately elaborated. Chemistry, however, has been so busy with its newer conceptions and vast industrial problems that it has not offered the aid to bacteriology and to medicine that it should. One of the problems—it will be largely a pharmaceutical manufacturer's problem in the end—will be to purify the indefinite vaccine, to eliminate it from the shotgun class and to isolate what in our ambiguity we are pleased to call the active principle. That this is necessary, all forward looking scientists will agree, I believe.

Intimately associated with this is the problem of chemotherapy which has been guided by the brilliant contributions of Paul Ehrlich. His theories of drug actions, his themes on avenues of research, have dominated the mind of the present day chemotherapeutic investigator. The quest, despite failures, goes on to find a remedy that will kill the invading organism without seriously injuring the host. But doesn't it often seem that there is much misdirected effort, due to following just this ideal? In the field of chemotherapy can one point to a single remedy that will effectively kill the invading bacteria without unduly injuring the host? Arsphenamin, quinin and mercury, the outstanding examples of chemotherapeutic agents? But their effectiveness is on organisms of a high type. Success has not been obtained in bacterial invasion. Yet newspapers feature stories, physicians renew interest, pharmaceutical chemists blindly hope whenever an announcement of a new antiseptic is made, particularly if the phenol coefficient is numerically high. The laws of mass action, the electronic theory of oxidation and reduction are not adequately considered. Now this is no deprecation whatever of the work of Pasteur and Ehrlich; it simply makes their contributions all the more remarkable. But it is time to realize that, after all, their work was not in proper sequence. Before bacteriologic chemistry can progress, before chemotherapy can be put on a logical basis, fundamental work must be done on the unit of life, the cell. This need has been recognized for some time. To start work that should have been done many years ago, to go back even farther than Pasteur, relatively speaking, is a difficult suggestion to researchers; to take up an unfinished problem requiring tedious, hard work with no promise of sensational discoveries is not particularly an inducement in this automotive age. But the task is before us, it simply must be done. In doing it, physics especially, and physiology must be at our command. Physics, not alone physical chemistry, including all it does must be utilized in the next decade by all forward-looking pharmaceutical houses engaged in scientific work. In addition to the fundamental studies that must be done on the cell, physics and chemistry must cooperate still further. Drug therapeutists cannot be unmindful of physiotherapy, nor can those who supply physicians with new remedies. After all, physiotherapy is simply another means of inducing chemical reactions in the body. It makes no difference whether cod liver oil, with its deficiency factor, or ultraviolet rays are administered to a rachitic child; the effect is the same. It is somewhat more startling when a chemical such as cottonseed oil is subjected to ultraviolet rays accomplishing the identical results. Bottled sunshine is no longer a fancy. What will be the results of this discovery in which the surface barely has been scratched, none can fortell. The matter of ionic medication by means of the electric current has not received careful scientific attention, yet it holds forth promise of many interesting observations.

Of course, this fundamental work cannot be done in the laboratories of pharmaceutical concerns; it must be done where there is cooperation of all the sciences, where research will not be hampered by commercial considerations. There is opportunity, nevertheless, for the pharmaceutical industry to recognize that the proper use of drugs will be enhanced by an appreciation of physics and physiotherapy, just as physiotherapy needs the cooperation of chemistry and chemotherapy.

RESEARCH

This leads me to the consideration of research. Of late there have been reports current of a tendency to curtail expenditures on the scientific departments. To do so will probably not be of immediate effect; the dividends might even be increased somewhat for a period. But the pharmaceutical house with competent scientific staff, the concern that encourages research, is the only hope of satisfactory drugs being produced in America. Otherwise the foreign domination of our therapeutics will again return. May that day never be.

SMALLPOX IN BOSTON IN 1690

According to the Boston department of health, *Public Occurances*, Sept. 25, 1690, published the following comment: "The smallpox which has been raging in Boston after a manner very extraordinary is now very much abated. It is thought that far more have been sick of it than were visited with it, when it raged so much twelve years ago. Nevertheless it has not been so mortal, the number of them that have dyed in Boston by this last visitation is about three hundred and twenty which is not perhaps half so many as fell by the former. . . . It infected some children of mothers that had themselves undergone the disease many years ago, for some such were now born full of the Distemper. It is not easy to relate the trouble and sorrow that poor Boston has felt by this Epidemical Contagion."

Medicolegal

Full Compensation Allowed for the "Loss" of an Impaired Eye and of a Sightless One

(Wareheim v. Melrose Granite Co. et al. (Minn.), 201 N. W. R. 543. Mosgaard v. Minneapolis St. Ry. Co. (Minn.), 201 N. W. R. 545)

The Supreme Court of Minnesota, in affirming in the Wareheim case an award of full compensation for the loss of an eye, holds that compensation for the loss of the use of an eye, paid under a settlement between the employee, employer and insurer, does not debar the employee from recovering the full schedule compensation specified in the workmen's compensation act of that state for the removal of the same eye, injured in a subsequent employment under a different employer, it appearing that the employee recovered from the first injury so that in certain positions he could read print and note approaching objects. It may seem inequitable to the employer, the court says, that full compensation should be given for the loss of an eye which another employer has also paid for, but that is due to the imperfection of the statute.

The industrial commission and the court are not given authority to award a compensation that will fit justice in each individual case. Especially is this true when it comes to the schedule given for the loss of a member of the body. It is the same for the youth as for the one tottering on the brink of the grave. It is the same for a member of perfect vigor and function as for one impaired and ill functioning. This court therefore thinks that the schedule should be permitted to speak where it specifically awards a certain sum for the loss of a member. Here was an actual removal of a member of the body for which the schedule fixed a specific compensation. To be sure, such member was impaired, but functioning to some extent. That it resulted in double compensation, in that a previous compensation had been paid by another employer, was the good fortune of the employee, for the statute has omitted to make provision for such cases. This is also apparent from the fact that, had the first injury resulted in the loss of a half or a third of the vision of the eye in question, and compensation been paid accordingly, the law does not authorize the industrial commission to take the compensation therefor into consideration in the award for the subsequent injury resulting in the removal of the eye. The difference between such a case and the one at bar is only one in degree of what may seem unfair compensation because of defects in the law itself.

The Supreme Court of Minnesota holds, furthermore, in the Mosgaard case that when, in the course of his employment, an accidental injury to a workman's eye necessitates its removal, the workman, totally blind in that eye since childhood, becomes entitled to compensation as provided in the workmen's compensation act, which allows, "for the loss of an eye, sixty-six and two-thirds per centum of the daily wage at the time of injury during one hundred weeks." That is to say, for the removal of a sightless eye, necessitated by an industrial accident, a workman is entitled to receive compensation for the loss of an eye as provided by the workmen's compensation act of Minnesota. In *State ex rel. Garwin v. District Court*, 129 Minn. 156, the workman, the court says, had but one good eye. He lost it and became totally blind. His earning capacity was virtually destroyed. But, under the provisions of the statute, he received no greater compensation than this workman who lost an eyeball, useless for any purpose except to fill the socket now filled with a glass eye, whose other eye is as good as it was before the accident, and whose earning capacity has not been impaired in the slightest degree. The inequalities are glaring, but, if they are to be removed, it must be by legislation.

Belief in Coming Death Needed for Dying Declarations

(State v. Stewart (N. M.), 231 Pac. R. 692)

The Supreme Court of New Mexico says that before a dying declaration is admissible in evidence it must be shown that it was made under a sense of impending death, and without any hope of recovery on the part of the declarant. It should be admitted with scrupulous care, since it was in the absence of the defendant and not under the sanction of an oath, the declarant was not subject to cross-examination and was in no peril of prosecution for perjury, and there was grave danger of omissions or unintentional misrepresentations both by the declarant and by the person reducing the statement to writing. But while it is indispensable, as a predicate to its admission in evidence, that it must be shown to the court that the declarant was possessed with a consciousness of impending death, the fact that the declaration was made in such a state of mind may be proved, not only by the declaration of the maker, but by other relevant evidence, and may be inferred, as well, from the surrounding circumstances, if these establish clearly that it was made under such a belief. Any language indicating a belief on the part of the declarant that imminent death is inevitable, or any conduct evidencing such a state of mind, is sufficient to authorize the admission of such declaration. So, also, is a statement of the attending physician or others to such effect made to the declarant, apparently acquiesced in by him.

In the instant case, the only evidence introduced relative to the dying declaration was that of the attending physician, who also appeared as a witness to the declaration introduced in evidence, which was made shortly after he arrived on his first visit at 9 a. m. on the day that the declarant was shot. The physician testified as to the condition in which he found the man, and that in a general way he explained the situation to him, telling him that he was not then in a condition to be moved for an operation, but that he would have to be built up and restored from the shock before an operation could be performed; that the patient made no reply, but the witness assumed that he understood the situation. When the physician returned at about noon, he had no hope for the man's recovery. The court does not think the evidence sufficient to establish prima facie that the declaration was made under the sense of impending death, wherefore it is held that it was error to admit the declaration in evidence.

There are decisions to the effect that, although the attending physician or surgeon may believe the wounded man to be progressing favorably, and even when such belief is expressed to the declarant, the dying declarations may be admitted, when it appears from other evidence that, in spite of such belief or of such expressions on the part of the physician, the declarant believed that death would necessarily result from the injury. But in each of the cases referred to there was other and independent evidence that the declarant had indicated his settled belief of his approaching death, in spite of the statements or opinion of the physician that there was hope that he might recover. The realization of approaching death must have existed at the time the statement was made, unless the statement was afterward reiterated with such consciousness on the part of the declarant. The opinion of the physician formed at a visit subsequent to the one at which the declaration was made would furnish no basis for the admission of the declaration in evidence.

Award for Benefit of Physicians and Hospital Sustained—Agent's Authority

(Texas Employers' Ins. Ass'n v. Drummond et al. (Texas), 267 S. W. R. 335)

The Court of Civil Appeals of Texas, in affirming a judgment that affirmed an award under the workmen's compensation act of the industrial accident board, says that the award was for $231.30 for the personal compensation of the injured employee and for $908.75 for the use and benefit of physicians, nurses, drugs and hospital charges. It was contended that the recovery for the physicians' charges of two physicians was improperly allowed because of failure to plead and prove that they had complied with Article 5736 of the Revised Statutes of Texas, which makes it unlawful for one to practice medicine without registering with the district clerk his authority for so practicing. That contention was overruled on the ground that this was a defensive matter, not pleaded as a defense, but first urged in a motion for a new trial. This court therefore holds that it came too late, for had it been so pleaded, no doubt the evidence would have been that these physicians had so qualified.

Another contention was to the effect that the judgment for physicians' bills, for operation, hospital charges and medicines, etc., was erroneous because, it was insisted, the evidence showed that there was no authority from the insurance association for furnishing them; because they were advanced after the expiration of two weeks from the date of the alleged injury, and because there was no compliance with Section 7, Part 1, of the workmen's compensation act, now Articles 5246-5249 of the revised statutes. With regard to the last point, it did conclusively appear that the provisions of these articles with respect to a physician and surgeon certifying to the necessity for surgical operation and additional hospital services after the expiration of one week were not complied with, but the case was tried by the defendants on the theory that the local agent of the insurance association had notice of all things that were being done, and in fact authorized all steps so taken by the parties seeking a recovery, and for that reason the association could not defeat a recovery.

The association urged that its local agent was not shown to have been authorized to bind the company in this way and thereby relieve the defendants of full compliance with the provisions of the statutes. However, there were many circumstances in evidence which tended to prove that such agent was the duly authorized agent of the association, such as statements in evidence made to one of the physicians at the time he took over the case and during the entire time of the treatment, such as the physician's written reports of the progress of the case in writing to the agent which were requested by the latter, etc. Besides, the agent testified, among other things, that he had been acting as district manager for the association and during that time had been investigating alleged injuries received by employees of the subscribers; had been dealing with physicians in seeing that medical attention was given to the patients—the same sort of thing that he did in this case, and that he kept fully informed as to the steps taken with regard to this patient. This was sufficient evidence to constitute prima facie proof that this alleged agent was the agent of the association and authorized to bind it and to fix liability therefor for all the acts of the physicians, nurses, hospital and medicines, as well as for the operation which, under the testimony and findings of the jury, were necessary, and charges reasonable. If the agent did not in fact have authority to do these things, which his acts and declarations showed that he had, it would have been an easy matter for the association, through its managing officers, to show the extent of his authority. By these things it waived a technical compliance with the provisions of the statutes quoted.

It was urged that it was error to admit the testimony of the physician and of another witness that the agent told them that it would be all right for the physician to take over this injured employee's case and go ahead with it, on the proposition that the declarations of a person purporting to bind a principal are not competent evidence against the principal, unless authority for their utterance is shown. But that this alleged agent of the association was its agent was not questioned. The only thing questioned was the extent of his authority. That the facts here sufficiently established that he was acting within the apparent scope of his authority could not be doubted.

Sheriff Without Power to Appoint Physician for Jail

(Clayton v. Board of Chosen Freeholders (N. J.), 127 Atl. R. 37)

The Supreme Court of New Jersey says that a rule to show cause was allowed in this case, directed to the board of freeholders of Monmouth County to show cause why a peremptory or alternative writ of mandamus should not issue commanding the said board to pay a voucher of relator Clayton for $250, being three months' salary as the physician of the common jail of Monmouth County. The relator was appointed such physician by the sheriff of the county. The question involved was, Who has the right to make such appointment? It was conceded that there was no statute giving the sheriff expressly such power, and this court has been unable to find any. The sheriff has no such power, unless it is conferred by authority of the legislature. This court thinks that he has no such power. A writ of mandamus will therefore be denied, with costs.

Depositions of Physician Properly Received

(John v. Reick-McJunkin Dairy Co. (Pa.), 127 Atl. R. 143)

The Supreme Court of Pennsylvania says that, in this action to recover damages for personal injuries, the depositions, taken in another state, of a physician who attended the plaintiff were offered in evidence on behalf of the plaintiff and were objected to by the defendant. The evidence objected to included the testimony of the physician as to facts given him by the patient, constituting a history of the latter's condition, on which the physician based his opinion as to the plaintiff's physical ailment and prescribed the treatment to be given. The trial court held that the evidence was properly received. In this there was no error. This evidence was properly received.

Society Proceedings

COMING MEETINGS

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Oregon State Medical Society, Medford, Sept. 2-4. Dr. C. L. Booth, 1021 Selling Bldg., Portland, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

72: 387-693 (May 1) 1925

Voluntary Relaxation of Esophagus. E. Jacobson, Chicago.—p. 387.
*Blood Regeneration in Severe Anemia. I. Standard Basal Ration Bread and Experimental Methods. G. H. Whipple and F. S. Robscheit-Robbins, Rochester, N Y.—p. 395.
*Id. IV. Green Vegetable Feeding. F. S. Robescheit-Robbins and G. H. Whipple, Rochester, N. Y.—p. 431.
Vital Function Studies. I. Analysis of Dreyer Standards of Vital Capacity. A. W. Rowe, Boston.—p. 436.
*Pulmonary Circulation by Transillumination Method. H. L. Hall, Cleveland.—p. 446.
Effect of Calcium Carbonate Supplement in Diet of Hens, on Weight, Protein Content and Calcium Content of White and Yolk of Eggs. G. D. Buckner, J. H. Martin and A. M. Peter, Lexington, Ky.—p. 458.
Seasonal Variation of Thyroid Size in Pigeons. O. Riddle and W. S. Fisher, Cold Spring Harbor, N. Y.—p. 464.
*Augmentation of Vascular Responses of Cat to Successive Vasomotor Stimuli of Equal Values. B. R. Lutz and L. C. Wyman, Boston.—p. 488.
*Effect of Compulsory Work During Gestation on Mother and Young. J. R. Slonaker and D. L. Robertson, Stanford University, Calif.—p. 502.
*Study of Tobacco Smoking. W. L. Mendenhall, Boston.—p. 549.
Demonstration of Bronchial Constriction and Compression from Physical and Other Causes. P. J. Hanzlik, San Francisco.—p. 558.
Lesions in Cerebral Cortex and Extension Rigidity in Cats. J. M. D. Olmsted and H. P. Logan, Toronto.—p. 570.
*Association of Copper with Substances Containing Fat-Soluble A Vitamin. J. S. McHargue, Lexington, Ky.—p. 583.
Effects of Early and Late Breeding on Mother and Sex Ration in Albino Rat. C. L. Coolley and J. R. Slonaker, Stanford University, Calif.—p. 595.
Action of Insulin. G. S. Eadie, J. J. R. MacLeod and E. C. Noble, Toronto.—p. 614.
*Physiology of Liver. X. Uric Acid Following Total Removal of Liver. J. L. Bollman, F. C. Mann and T. B. Magath, Rochester, Minn.—p. 629.
Mineral Metabolism Studies with Dairy Cattle. H. G. Miller, W. W. Yates, R. C. Jones and P. M. Brandt, Corvallis, Ore.—p. 647.
Asynchronism of Right and Left Ventricular Contractions and Independent Variations in Their Duration. L. N. Katz, Cleveland.—p. 655.

Blood Regeneration in Severe Anemia.—The anemia experiments made by Whipple, Robscheit-Robbins, and many others, show that iron treatment is without effect on subsequent hemoglobin and red cell regeneration. The same is probably true for human beings. Long continued severe anemia due to hemorrhage may be associated with iron depletion and these experiments in dogs show a favorable reaction to iron treatment (Blaud's pills). The same is probably true for human beings. From these two simple types of experimental anemia no data are given which enable one to predict the reaction to drug treatment to be expected in the complex human anemias, so often associated with chronic infection and intoxication. Variations in the color and hemoglobin indices are discussed. The low color index in these experiments is referable to small red cells rather than pale red cells or the hemoglobin content is almost normal in these red cells which are distinctly subnormal in size. Germanium dioxid is a drug which under experimental conditions is almost inert. Arsenic in the form of cacodylate or Fowler's solution may give a slight reaction or be quite inert as influencing hemoglobin regeneration in these experiments. Under a variety of experimental conditions in anemia due to hemorrhage the reactions to iron may vary, yet the favorable reaction to liver feeding is a sustained and uniform maximum.

Effect of Green Vegetable Feeding on Anemia.—Short anemia experiments made by Robscheit-Robbins and Whipple indicated that fresh or cannel milk or dried spinach was rather a favorable diet factor for the regeneration of hemoglobin and red cells. Similar experiments indicated that many other vegetables were inert under similar conditions—for example carrots, Brussels sprouts, parsley, celery and beet tops. Severe anemia experiments show clearly that under such conditions the green vegetables are only moderately favorable food factors for the regeneration of hemoglobin and red cells. Spinach and beet greens appear to be very slightly more potent than lettuce and asparagus but different dogs react in various degrees to these four green vegetables. It may be safest to rate all four alike and state that the presence of large amounts of these vegetables in the diet modifies but slightly the hemoglobin and red cell construction. Chlorophyl may be very like hemoglobin in its chemical structure but the normal dog cannot utilize much if any of the chlorophyl nucleus for hemoglobin construction even under maximal stress.

Pulmonary Circulation by Transillumination Method.—A transillumination method for studying the blood-flow in the pulmonary vessels of the cat and rabbit is described by Hall. The character of the circulation in the larger and smaller arterioles, capillaries and venules is described. Evidence is presented which indicates that the small vessels of the pulmonary system are affected through the sympathetic nerve fibers but not through the parasympathetic fibers of the vagus. Stimulation of the latter, however, produces changes in the air sacs that can be attributed to bronchomotor nerves.

Assay of Epinephrin.—The unreliability of the blood pressure method for the physiologic assay of epinephrin is pointed out by Lutz and Wyman.

Effect of Compulsory Work During Gestation on Mother and Young.—The general conclusions drawn by Slonaker and Robertson are that forced exercise given rats during gestation sufficient to cause a marked degree of fatigue tends to cause resorption of young, abortion, pseudopregnancy or death of the adults, a reduction of the number of young born and a lack of normal lactation.

Effect of Tobacco Smoking.—Mendenhall feels that the results of his investigation seem to warrant the following conclusions: (1) The immediate effect of smoking on a sensory mechanism is conditioned on the state of the sensory mechanism at the time when the subject indulges in smoking. (2) The immediate effect of smoking is stimulation when the sensory mechanism is depressed, or depression when the sensory mechanism is in a state of hyperexcitability. The depressing effect of smoking is much more marked on the threshold than is the stimulating effect. (4) The sensory mechanism of smokers and nonsmokers, both male and female, reacts alike to the influence of smoking. (5) Non-nicotine containing smoke does not produce the same results as nicotine containing smoke. The results are suggestive of nicotine action because of the difference of effect produced by nicotine smoke and non-nicotine smoke; and because the known action of nicotine on nervous structure is chiefly that of depression.

Function of Copper in Metabolism.—The wide distribution of small amounts of copper in plant animal tissues and its greatest concentration occurring in vital organs leads McHargue to infer important biologic functions for this element in the normal metabolism of plants and animals.

Liver and Uric Acid Destruction.—The work done by Bollman et al. shows that the destruction of uric acid in the normal dog depends on the presence of the liver, as this process ceases as soon as the liver is removed.

American Journal of Public Health, Albany, N.Y.

15: 387-486 (May) 1925

Eighty-Six Cities Studied by Objective Standards. G. T. Palmer, P. S. Platt and W. F. Walker.—p. 387.
Rendering Account in Public Health. W. H. Frost, Baltimore.—p. 394.
Necessity for Completing Registration Area by 1930. W. H. Davis, Washington, D. C.—p. 399.
Malden Studies in Health Education. C. E. Turner, Boston.—p. 405.
Administrative Control of Contagious Diseases. C. V. Craster, Newark, N. J.—p. 415.
Industrial Hygiene by Employers' Organizations. F. L. Rector, New York.—p. 423.
Effect on Infants of High Prepasteurization Counts. J. H. Schrader and J. C. Swenarton, Baltimore.—p. 427.
Standardization of Typhoid-Paratyphoid Vaccine. J. W. Smith, Jr.—p. 433.

American Journal of Roentgenology and Radium Therapy, New York

13: 411-514 (May) 1925

Surgical Treatment of Cancer of Breast. E. S. Judd, Rochester, Minn. —p. 411.
*Value of Postoperative Irradiation in Mammary Carcinoma. W. A. Evans and T. Leucutia, Detroit.—p. 415.
*Use of Roentgen Ray in Pertussis. R. D. Leonard.—p. 420.
Roentgen-Ray Treatment of Diseased Tonsils and Adenoids. P. B. Maccready, New Haven, Conn.—p. 424.
Roentgen-Ray Diagnosis of Nonopaque Foreign Bodies in Trachea. W. F. Manges, Philadelphia.—p. 429.
Chronic Appendicitis. A. G. Schnack, Honolulu, T. H.—p. 438.
Case of Multiple Myeloma. W. W. Belden, New York.—p. 442.
Normal Variations and Pathologic Conditions of Diaphragm. L. T. le Wald, New York.—p. 447.
Epilation in Mice as Biologic Standard for Determining Roentgen Ray Dosage. H. H. Hazen and L. C. Milstead, Washington, D. C.—p. 451.
Theoretical and Experimental Study of Small Ionization Chamber. H. H. Fricke and O. Glasser, Cleveland.—p. 453.
Standardization of Roentgen-Ray Dose by Means of Small Ionization Chamber. H. Fricke and O. Glasser, Cleveland.—p. 462.

Postoperative Roentgenotherapy in Mammary Cancer.—Evans and Leucutia are convinced that there is a beneficial action of roentgen rays in the postoperative stage of mammary carcinoma. A local tissue reaction is produced by the irradiation which brings about immunization against carcinoma. It is essential that the dose should be within the limit of the tolerance of the normal tissues. A destruction of the protective normal tissue around the lesion will produce aggravation of the disease.

Roentgenotherapy of Pertussis.—An experience with more than 400 cases has shown Leonard that roentgen-ray irradiation produces a diminution in the number and severity of the paraxysms in more than 75 per cent. of the cases, controlling particularly well the vomiting spells. The roentgenographic findings would seem to indicate that the beneficial results may bear some relation to the effect which roentgen rays have on the bronchial lymph glands.

American Journal of Tropical Medicine, Baltimore

5: 211-268 (May) 1925

Public Health Progress in Porto Rico. R. B. Hill, New York.—p. 211.
Leprosy Problem in Brazil. H. C. de Souza-Araujo.—p. 219.
*Tetrachlorethylene; New Anthelmintic. M. C. Hall and J. E. Shillinger, Washington, D. C.—p. 229.
*Intestinal Flagellates in Tropical America. R. W. Hegner, Baltimore.—p. 239.
Complement-Fixation Tests on Serums of Cattle Harboring Trypanosoma Americanum. H. W. Schoening, Washington, D. C.—p. 247.
Taxonomy of Chiggers, New Genus, Six New Species and New Variety. H. E. Ewing, Washington, D. C.—p. 251.

Tetrachlorethylene.—Hall and Shillinger assert that tetrachlorethylene is apparently as effective as carbon tetrachlorid and may be slightly more effective. The indicated dose for man would not be over 3 c.c. and might be as little as 2 c.c. for the removal of hookworms. It would be about as effective in removing ascarids from dogs as is carbon tetrachlorid, and would probably show the same inferiority to chenopodium for the removal of ascarids from man. Presumably the same combinations with chenopodium would be effective in mixed infections with hookworms and ascarids in man. The safety of the drug would probably be very close to that of carbon tetrachlorid, and the drug would probably produce the same lesions, usually a hepatic necrosis, healing in the course of one or two weeks, and would have the same contraindications.

Intestinal Flagellates in Tropical America.—Data are presented by Hegner resulting from examinations of stools from natives at Tela, Honduras, Port Limon, Costa Rica and Santa Marta, Colombia. The incidence of infection with *Trichomona hominis* was 20.6 per cent., with *Chilomastix mesnili*, 7.7 per cent., and with *Giardia lamblia*, 2.1 per cent.

Annals of Surgery, Philadelphia

81: 893-1051 (May) 1925

*Surgical Aspects of Pathology of Gliomas of Brain. E. Sachs, St. Louis. —p. 893.
*Management of Intracranial Injuries with or Without Fracture. J. F. Connors, New York.—p. 901.
*Splenic Blood Disorders. E. M. Hanrahan, Baltimore.—p. 906.
Drainage of Thoracic Duct in Experimental Peritonitis. H. H. Cox and L. B. Bell, Chicago.—p. 911.
Surgical Emergencies of Abdomen. E. L. Eliason, Philadelphia.—p. 917.
*Viability of Intestine in Intestinal Obstruction. H. B. Eisberg, New York.—p. 926.
*Rôle of Pyloro-Duodenal Nerve Supply in Surgery of Duodenal Ulcer. B. Schiassi, Modena, Italy.—p. 939.
Benign Tumors of Stomach. C. Higgins, Cleveland.—p. 949.
Gallstones and Diseases of Gallbladder. C. H. Mayo, Rochester, Minn. —p. 955.
Surgery of Gallbladder and Ducts. F. S. Mathews, New York.—p. 961.
Cancer of Rectum and Rectosigmoid. J. I. Russell, New York.—p. 972.
*Thrombo-Angiitis Obliterans. F. L. Meleney and G. G. Miller, Peking, China.—p. 976.
*Elimination of Morphine and Other Accessory Drugs in Operations Under Local Anesthesia. J. G. Anderson, New York.—p. 994.
Polyposis of Appendix Vermiformis with Intussusception of Appendix. H. W. Horn, Wichita, Kan.—p. 1002.

Pathology of Gliomas of Brain.—Sachs believes that all gliomas that are cystic in character or, if solid, have a sharp line of demarcation, are composed of glia nuclei, are favorable cases for radical removal, and, especially the cystic variety, offer a very good prognosis. Those that are deep seated in the cerebellum are less favorable, but are so soft that, with suitable suction apparatus, they can probably be quite completely removed by that method, but they show a great tendency to recur. Deep seated tumors in the cerebrum are infiltrating tumors, and are unfavorable cases for treatment. These are the rapidly growing tumors and have a bad prognosis. There are some gliomas that seem to respond to deep roentgen-ray therapy.

Treatment of Intracranial Injuries.—Among the 497 cases of intracranial injuries analyzed by Conners, death occurred in forty-eight hours in 181 and later than that in seventy-seven. There were 232 deaths without operation and twenty-six deaths following operation; 198 recoveries without operation and forty-one recoveries following operation.

Splenic Blood Disorders.—A surgical classification based on end results is attempted by Hanrahan. Group 1: Splenectomy is definitely indicated in purpura hemorrhagica, the slow chronic forms of familial hemolytic jaundice, and the early forms of splenic anemia (including the Banti syndrome). Group 2: Splenectomy should be considered, and the decision should be based on the results seen in similar conditions, in the more progressive forms of hemolytic jaundice, particularly the acquired forms, splenic anemia, and in rare cases of pernicious anemia. Group 3: Splenectomy is contraindicated in lymphoid and, unless previously irradiated, in myeloid leukemia, polycythemia, and the rapidly progressive fulminant forms of hemolytic jaundice, splenic anemia and pernicious anemia.

Viability of Obstructed Intestine.—From the evidence obtained by him, Eisberg asserts that leaving intestine of questionable viability in the peritoneal cavity with the idea that it is just as safe to resect within twenty-four hours is to be condemned. A fatal toxemia can result within this time if the segment does not become viable.

Pyloroduodenal Nerve Supply and Duodenal Ulcer.—Schiassi contends that the neurotic constitution of these patients is of the greatest importance as a predisposing factor in affections in the gastroduodenal regions. In the case of a duodenal lesion already completed, while every means should be tried for a possible cure of the ulcer, provision should be instituted to prevent its probable return. For the first indication for the cure of the ulcer besides rest, atropin and opium, gastro-enterostomy is recommended. For the second indication, the surgeon should sever the nerve connections of the stomach so that it will be free from the effects of nervous influences which may come through the sympathetic trunks. Schiassi presents precise operative suggestions as to the modus operandi of freeing the affected portion of the digestive tract from the influence of sympathetic innervation.

Thrombo-Angiitis Obliterans.—Meleney and Miller present the results of their anatomic, pathologic and clinical study of twenty-five cases of thrombo-angiitis obliterans occurring among Chinese. The process appears to be an inflammatory one, attacking the large and small arteries and veins in an irregular manner and causing thrombosis and obliteration. It is not necessarily progressive either from below upward or from above downward. The nutrient arteries of the nerves are frequently the site of this process. This may in some manner explain the severe pain which is constantly associated with this disease. An extensive collateral circulation develops as a result of the blocking of blood vessels. In some cases this collateral development can keep pace with the obliterating process and maintain the circulation. In other cases it cannot keep pace with it and then more or less extensive gangrene develops. In those cases in which there is general and local evidence that the collateral circulation can keep pace with or outrun the obliterating process, and the gangrenous area is small, the treatment should be conservative operation. In the other cases the treatment should be radical operation. Only in borderline cases can conservative general treatment be expected to be of much avail.

Preoperative Administration of Morphin Not Beneficial.—Observations made by Anderson on several hundred cases in which operation was performed under local anesthesia, with and without the preoperative use of morphin or epinephrin, indicate that the preoperative administration of these drugs is not as beneficial to the patient as has been generally believed. This is particularly true in urologic cases. This investigation leads to the conclusion that in the majority of cases, local anesthesia, properly administered, affords the patient the desired relief from pain, and the cooperation of the anesthetist and the operating team will diminish mental anxiety. Therefore, the patient should not, save in exceptional cases, be subjected to the possible untoward effects of accessory drugs.

Arkansas Medical Society Journal, Little Rock

21: 257-272 (May) 1925

Treatment of Nasal (Sphenopalatine Meckel's) Ganglion in Hay-Fever. R. J. Payne, St. Louis.—p. 257.
Cults. L. C. McVay, Marion.—p. 260.

Boston Medical and Surgical Journal

192: 987-1034 (May 21) 1925

Pathology of Exophthalmic Goiter. R. B. Cattell, Boston.—p. 989.
New Growths Involving Terminal Bile and Pancreatic Ducts. E. Springer.—p. 997.
Use of Glucose in Treatment of Disease in Children. F. B. Talbot, Boston.—p. 1000.
Congenital Tumors of Maxilla: Case. G. D. Cutler and C. Rock, Boston.—p. 1001.
Teaching of Obstetrics. E. P. Davis, Philadelphia.—p. 1003.
Is the Profession Interested in Preventive Medicine? E. R. Kelley.—p. 1007.
Smallpox in Canada from 1913-1923. S. B. Woodward, Worcester.—p. 1008.

192: 1035-1084 (May 28) 1925

*Physiologic Effects of Radiation; Electromagnetic Spectrum. W. T. Bovie, Cambridge, Mass.—p. 1035.
*Uteroplacental Apoplexy. Two Cases. L. E. Phaneuf, Boston.—p. 1037.
United States Veterans' Bureau and Disabled Exservice Man. I. Green, Boston.—p. 1046.
Gallstone Ileus. G. A. Moore, Brockton.—p. 1051.
Treatment of Scoliosis. C. E. Ayers, Worcester.—p. 1055.
Developmental Diagnosis in Infancy. A. Gesell, New York.—p. 1058.
Children's Personality and Behavior. E. S. Abbot, Boston.—p. 1060.

Influence of Light on Growth.—A very illuminating experiment dealing with the influence of light on the growth of chickens was performed at the State University of Maine. A brief résumé is given by Bovie. Two hundred and fifty chicks were used. They were divided into three groups. The chicks of the first group were allowed to run outside the greenhouse in the open sunlight, although they came in to sleep and eat. The chickens in the second group were exposed to the rays of a quartz mercury vapor lamp for twenty minutes each day. The chickens of the third group were shielded from the light of this lamp so that they received only the sunlight which passed through the glass roof of the greenhouse. There is a very restricted range of wave lengths in the sunlight ultraviolet that is not transmitted by glass. Since in these experiments the chickens grew and developed normally in full sunlight and since they did not grow and develop in a normal manner in light transmitted by glass it is evident that chickens, at least, are vitally dependent on this narrow band of the ultraviolet.

Uteroplacental Apoplexy.—Two cases of uteroplacental apoplexy following premature detachment of the normally implanted placenta are reported by Phaneuf. In one the placental separation was almost complete, while in the other the placenta was free in the uterine cavity. The apoplectic process was much more severe in extent in the second case than in the first. Uterine torsion was not a prominent factor in either case, and trauma could hardly be considered as a cause; it was absent in the first case, and had occurred about three months before the onset of the symptoms in the second. In both instances the lower uterine segment was free from hemorrhagic infiltration. Delivery was accomplished by the abdominal route. Both fetuses were stillborn. Both puerperas were discharged from the hospital in good physical condition, and have remained well since.

Georgia Medical Association Journal, Atlanta

14: 177-220 (May) 1925

Features of Mental Disease Problem. R. C. Swint, Milledgeville.—p. 177.
Internal Secretion in Rheumatism. J. B. Camp, Carrollton.—p. 183.
Treatment of Diabetes Mellitus. H. I. Reynolds, Athens.—p. 187.
Precancerous Dermatoses. J. W. Jones, Atlanta.—p. 189.
Acute Intestinal Obstruction. P. W. Best, Atlanta.—p. 192.
Acute Appendicitis. W. A. Selman, Atlanta.—p. 195.
Rectal Feeding. G. M. Niles, Atlanta.—p. 197.
Eye Symptoms of Constitutional Disturbances. J. R. Simpson, Gainesville.—p. 199.
Diseases of Prostate. J. T. Stukes, Americus.—p. 202.

Indiana State Medical Association Journal, Ft. Wayne

18: 167-208 (May) 1925

Plastic Surgery About Face, Head and Neck. J. C. Beck, Chicago.—p. 167.

Johns Hopkins Hospital Bulletin, Baltimore

36: 325-392 (May) 1925

*Fate of an Intravenously Injected Dye (Brilliant Vital Red); Use in Blood Volume Determination. H. P. Smith, Baltimore.—p. 325.
*Hemophilia; Three Cases. E. C. Davidson and I. McQuarrie, Detroit.—p. 343.
*Excretion of Guanidine Bases in Two Cases of Arterial Hypertension with Reduction in Blood Pressure. R. H. Major, Kansas City, Kan.—p. 357.
Origin of Phagocytic Cells of Lung of Frog. M. R. Lewis, Washington, D. C.—p. 361.
Alleged Power of Bacteria to Form Bile Pigment from Hemoglobin. A. R. Rich and J. H. Bumstead, Baltimore.—p. 376.

Fate of Intravenously Injected Dye.—A study was made by Smith of the behavior of brilliant vital red when introduced into the blood stream. He found that this dye is slowly eliminated by the liver but not by the kidneys. Before being eliminated from the body much of the dye is taken up and stored by phagocytes. The phagocytes do not completely remove the dye from the plasma because the phagocytic reaction is a matter of equilibrium between phagocytes and the dye colored plasma. It is shown that dye passes in considerable amounts into the lymph and tissue fluids also. This phenomenon doubtless explains, in part, the fact that the dye method gives figures which are larger than the carbon monoxid or direct method of Welcker. Other reasons for this difference are discussed.

Familial Hemophilia.—A typical, hemophilic family is reported on by Davidson and McQuarrie in which fourteen proved cases of hemophilia have occurred in eight generations. The hereditary transmission occurred in this family according to the law of Nasse. No occurrence of the disease in females and no transmission through the males of the family has been observed. One typical case of sporadic hemophilia is described The clinical picture and the blood abnormalities are identical in the sporadic type and in the hereditary type of the disease. The blood coagulation time and the prothrombin time in the cases of hemophilia were from twice to twenty-five times as great as the normal. The finding by Minot and Lee of a qualitative platelet deficiency without a diminution in the number of platelets has been confirmed. The bleeding time, the capillary resistance, the nature of the blood clot when finally formed, the amount of blood calcium and the number of blood platelets were at all times found to be normal in the cases of hemophilia studied.

Relationship Between Guanidin Bases and Hypertension.—The two cases reported by Major suggest a relationship between the guanidin bases and hypertension, since the marked increase in excretion of these bases was followed by a fall in blood pressure.

Journal of General Physiology, Baltimore

7: 581-669 (May 20) 1925

Pulsation of Contractile Vacuole of Paramecium as Affected by Temperature. W. H. Cole, Worcester, Mass.—p. 581.

Mechanism of Change in Resistance of Erythrocytes to Hypotonic Salt Solutions. S. C. Brooks, Washington, D. C.—p. 587.

Hydrogen Ion Concentrations in Blood of Insects. R. W. Glaser, Princeton, N. J.—p. 599.

Test for Diffusible Ions. II. Ionic Nature of Pepsin. J. H. Northrop, New York.—p. 603.

New Methods in Physiology and Pathology of Plants. C. B. Lipman and A. Gordon, Berkeley, Calif.—p. 615.

Interfacial Tensiometer for Universal Use. P. Lecomte du Nuoy, New York.—p. 625.

Cell Sap of Valonias and Problem of Flotation. W. J. V. Osterhout and M. J. Dorcas, Cambridge, Mass.—p. 633.

Production of Carbon Dioxid by Nerve. G. H. Parker, Cambridge, Mass.—p. 641.

Journal of Immunology, Baltimore

10: 567-642 (May) 1925

*Hepatic Reactions in Anaphylaxis. IX. Effects of Dehepatization on Reactions of Certain Smooth Muscle Structures in Canine Anaphylaxis. W. H. Manwaring, V. M. Hosepian, J. R. Enright and D. F. Porter, Stanford University, Calif.—p. 567.

*Id. X. Hepatic Anaphylatoxin. W. H. Manwaring, V. M. Hosepian, F. I. O'Neill and H. B. Moy, Stanford University, Calif.—p. 575.

*Id. XI. Glycogen Content of Anaphylactic Liver. F. I. O'Neill, H. B. Moy and W. H. Manwaring, Stanford University, Calif.—p. 583.

Action of Pancreatic Extracts on Complement. A. Wormall, H. Robinson and J. Gordon, Leeds, Eng.—p. 587.

*Incidence of Two Types of Group II Human Red Blood Cells. B. S. Kline, E. E. Ecker and A. M. Young, Cleveland.—p. 595.

Antigenic Properties of Extracts of Horse Dander. I. Active Sensitization of Guinea-Pigs to Horse Dander Extract. W. T. Longcope, D. P. O'Brien and W. A. Perlweig, Baltimore.—p. 599.

Agglutinable Antigens of Bacillus Influenzae. I. Methods of Preparing and Preserving Antigens of B. Influenzae, and Their Effects on Specific Agglutination. M. J. Evans and J. C. Small, Philadelphia.—p. 613.

*Bacteriophage with Respect to Complement Fixation Tests. E. S. Sanderson, Princeton, N. J.—p. 625.

*Specific Substances in Alcohol Extract of Bacillus Tuberculosis. L. Dienes and E. W. Schoenheit, Asheville, N. C.—p. 631.

Hepatic Reactions in Anaphylaxis.—Manwaring et al. summarize their observations as follows: During the first two minutes of typical anaphylactic shock in intact dogs, the uterus, urinary bladder and intestines are thrown into sharp contraction. These typical anaphylactic contractions do not take place on intravenous injection of specific foreign protein into dehepatized anaphylactic dogs. Therefore, it is believed that the smooth muscle contractions here considered are due to chemical products (hepatic anaphylatoxins), explosively formed or liberated by the anaphylactic liver, products having a histamin-like effect on smooth muscle structures.

Hepatic Anaphylatoxin.—The anaphylactic fall in arterial blood pressure in normal dogs after anaphylactic liver transplantation Manwaring et al. found to be less prolonged than the blood pressure fall in control intact anaphylactic dogs. Recovery is usually complete within thirty minutes. In the anaphylactic controls, recovery usually does not take place within ninety minutes. It seems probable, therefore, that the hepatic anaphylatoxins are not the only factors operative in acute canine anaphylactic shock.

Glycogen Content of Anaphylactic Livers.—A chemical study made by O'Neill et al. of shock livers showed that glycogen disappears almost quantitatively from the canine liver during the first fifteen minutes of anaphylactic shock. This observation is in line with the initial hyperglycemia in guinea-pig anaphylaxis recently reported by Zunz and La Barre.

An Agglutinable Substance in Blood Cells.—An agglutinable substance (C) was detected by Kline, Ecker and Young in the corpuscles of 162 of 200 Group II adults. This substance was also detected in fifty-one of 100 new-born Group II infants.

Nonspecific Complement Fixation.—Nonspecific complement fixation with normal rabbit serum and extract and infusion bouillons is described by Sanderson and its possible bearing on the theory of a bacteriophagus antigen antibody union as based on the complement fixation test is pointed out.

Specific Substances in Tubercle Bacillus.—With the successive use of different lipoid solvents, the effectiveness of extracts from tubercle bacilli that Dienes and Schoenheit obtained were established as antigens in the complement fixation test. With the separation of the ether and alcohol soluble and acetone insoluble fraction of the extracts and in several cases with washing them with water, they obtained from all extracts examined preparations which were active as antigens very closely in the same amount, 0.00020 to 0.00030 mg. being the antigen unit. They did not succeed with continued purification in enhancing more the potency of the preparation.

Journal of Laboratory and Clinical Medicine, St. Louis

10: 603-696 (May) 1925

*Microscopically Demonstrable Fat in Normal Human Heart Muscle. A. M. Master, New York.—p. 603.

Typical Fall Surveys of Hay-Fever Flora. O. C. Durham, Kansas City, Mo.—p. 610.

Laboratory in Diagnosis and Treatment. W. Burdick, Denver.—p. 613.

*Tissue Autolysis in Vivo. I. Blood Changes; Physical and Chemical. E. C. Mason, E. C. Davidson, C. W. Matthew and P. B. Rastello, Detroit.—p. 622.

*II. Points of Action of Sodium Phenobarbital and Phenobarbital in Lowering Blood Pressure. C. M. Gruber and R. F. Baskett, St. Louis.—p. 630.

Synergistic Analgesia and Anesthesia; Magnesium Sulphate, Ether, Morphin and Procain. J. T. Gwathmey and C. W. Hooper, New York.—p. 641.

Acute Myeloid Leukemia: Case. A. A. Blair, Fort Smith, Ark.—p. 659.

*Simple Therapeutic Method for Standardization of Digitalis. J. B. Berardi, M. C. Canan and H. McGuigan, Chicago.—p. 661.

Proposed Modification of Kaiserling Method for Preservation of Specimens for Display Purposes. R. Lundquist and H. E. Robertson, Rochester, Minn.—p. 665.

Modified Gram Stain (Ruhland). A. H. Sanford, Rochester, Minn.—p. 668.

Improved Self Feeder for Rats. R. Hoagland and O. P. Clipper, Washington, D. C.—p. 669.

Improved Device for Determination of Dextrose in Urine by Fermentation. R. Szymanowitz, Newark, N. J.—p. 671.

Fat in Normal Heart Muscle.—Thirteen human hearts were examined by Master. His findings have convinced him that in human heart muscle microscopically visible fat is normally present. The fat resides in the sarcoplasm between the muscle fibrils, and is arranged in longitudinal and transverse rows. Apparently, the amount of fat has no relation to the state of nutrition at the time of death; neither has the age of the individual, the color, nor the sex. The so-called pigment or brown atrophy of the heart, which is supposed to be an indication of degenerative processes, e. g., senility, was found in moderate amounts in two healthy boys, one 8 years old and the other 15.

Tissue Autolysis in Vivo.—The adsorption of all dead or injured body tissue, as well as organic foreign material introduced into the body, is accomplished principally through the action of autolysis. The degree of toxicity accompanying such adsorption apparently depends on the toxicity of the by-products liberated during autolysis. With this conception of autolysis, Mason et al. believe it becomes necessary to assume that the toxicity accompanying burns is possibly due to the rapid liberation of such toxic by-product and it is likewise highly suggestive that the malaise accompanying roentgen-ray irradiation is the result of the liberation of a toxic material associated with autolysis of body tissue.

Effect of Phenobarbital on Heart.—Many of the earlier writers believed that the heart rate was accelerated under the influence of phenobarbital and sodium phenobarbital. Gruber and Baskett have been unable to confirm this. They found as the usual effect that the heart rate is slowed, the heart's force is diminished and that the heart itself is dilated slightly when acted on by sodium phenobarbital. There appears to be a greater depression of the cutaneous vessels than of the visceral vessels and the vessels of the limb dilate while those of the intact intestine, kidney and spleen contract. However, perfusion experiments show that the vessels of the kidneys may also dilate and those of the limb may contract.

Standardization of Digitalis.—The method presented by Berardi, Canan and McGuigan is based on a therapeutic standard and requires very little time and expense. Standardization may be secured from the use of a few dogs. After about one week these dogs can be used again for standardization, thus eliminating a great expense for new animals. With a single dog, without injuring him, one may closely approximate the strength of a given preparation, since 0.03 c.c. per kilogram of a standard tincture will usually cause nausea and vomiting and 0.01 c.c. will cause considerable slowing of the heart rate. If a group of dogs be kept for the standardization, very dependable results can be obtained.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

25: 275-355 (May) 1925

Relation of Dosage to Effect. II. L. F. Shackell, Salt Lake City, Utah. —p. 275.
*Action of Alcohol on Circulation. R. J. S. McDowall, London.—p. 289.
*Mechanism of Action of Antipyretic Drugs. T. S. Githens, New York. —p. 309.
Some Effects of Arsonium, Stibonium, Phosphonium and Sulfonium Compounds on Autonomic Nervous System. R. Hunt, Boston, and R. R. Renshaw, New York.—p. 315.

Action of Alcohol on Circulation.—McDowall contends that, even in therapeutic doses, alcohol reduces the venous pressure in man and may relieve the heart in this way. One can understand why, on purely physiologic grounds, chronic alcoholics are notoriously bad subjects in infectious conditions, especially pneumonia. The hearts of such individuals will be frequently subjected to periods of diminished venous filling in which it is called on to do very little work per beat, and as the heart, like any other organ, adapts itself to the amount of work it has to do, it will become gradually less efficient and less capable of dealing with an additional load such as occurs in an emergency like pneumonia. The special liability of chronic alcoholics who take little physical exercise to be subjects of cardiac failure is well known, and no doubt it is for a similar reason that the prognosis in pneumonia becomes increasingly worse as the patient gets older and his heart becomes less efficient.

Mechanism of Action of Antipyretic Drugs.—The experiments reported by Githens covering five species of animals and two antipyretic drugs, antipyrin and pyramidon, indicate that the extent of fall in body temperature occasioned by a given dose of an antipyretic, is chiefly dependent on two variables: (1) The effect of antipyretic drugs on body temperature will be the greater the higher is the metabolic rate of the individual. (2) The more the temperature of the surrounding air is below that of the animal, the greater will be the fall of body temperature.

Journal of Urology, Baltimore

13: 497-573 (May) 1925

Radiographic Evidence of Association of Ureteral Stricture and Urinary Calculi. G. L. Hunner, Baltimore.—p. 497.
*Bilateral Heminephrectomy in Bilateral Double Kidney. D. N. Eisendrath and F. M. Phifer, Chicago.—p. 525.
Palliative Treatment of Bladder Diverticula. J. S. Read, Brooklyn.—p. 537.
New Electrodes for Application of Diatheramy to Prostate. M. Stern, New York.—p. 545.
Unusual Dilatation of Urethra with Valve Formation. H. C. Bumpus, Jr., Rochester, Minn.—p. 551.
Probable Case of Triorchidism. H. G. Holder, New York.—p. 555.
Infection of Female Genitalia by Organism of Vincent; Case. E. McCormac, New Orleans.—p. 565.
Automatic Cystoscopic Irrigating Apparatus. E. Davis, Omaha.—p. 569.

Bilateral Heminephrectomy.—Eisendrath and Phifer assert that their case is the first one reported of resection of both lower portions (heminephrectomy) of double kidneys on both sides of the body. The diagnosis was made by finding two ureteral orifices on each side of the bladder and confirmed by the use of opaque catheters and pyelography. A preoperative diagnosis was made of left sided noncalculous infected hydronephrosis (in both instances) of the lower portions of double kidneys. One set of blood vessels supplied both portions on both sides. Heminephrectomy was performed at intervals of two months with uneventful recovery.

Laryngoscope, St. Louis

35: 345-422 (May) 1925

Fractures of Malleus. D. W. Drury, Boston.—p. 345.
Control of Intractable Singultus (Hiccough) Through Nasal (Sphenopalatine-Meckel's) Ganglion. C. S. Rehfeldt, St. Louis.—p. 354.
Foreign Body (Penny) in Esophagus. P. S. Stout, Philadelphia.—p. 357.
Physiology of Tonsils. D. Nussbaum, Philadelphia.—p. 359.
Food Impaction in Esophagus; Simple Treatment. J. E. Lebensohn, Chicago.—p. 367.
Tuberculosis of Tonsil. J. A. Morgan, Honolulu, T. H.—p. 368.
Vacuum Tonsillectome. F. A. Beck, Allentown, Pa.—p. 371.
Vacuum Frontal Headache. L. R. Effler, Toledo, Ohio.—p. 375.
End-Results of Tonsillectomy. H. H. Amsden, Concord, N. H.—p. 382.
Tonsil Question. H. D. Newkirk, Anaheim, Calif.—p. 384.
Endoscopy of Esophagus for Diagnosis and Treatment of Stricture, Cardiospasm and Malignant Disease. H. H. Forbes, New York.—p. 391.
Nasal Infections. F. W. Briggs, Duluth, Minn.—p. 396.
Capillary Suction as Aid in Treatment of Ear, Nose and Throat Diseases. J. C. Beck, H. L. Pollock and F. L. Lederer, Chicago.—p. 402.
Technic for Submucus Resection, with Presentation of Membrane Elevator. M. F. Jones, New York.—p. 406.

Medical Journal and Record, New York

121: 589-656 (May 20) 1925

Mechanism of Disease. S. D. Ludlum and E. McDonald, Philadelphia. —p. 589.
Spirochetosis Riverensis. L. A. Micheloni, Montevideo, Uruguay.—p. 593.
Intraperitoneal Implantation of Cervical Carcinoma. P. E. Dunham, New York.—p. 597.
Psychology, Psychopathology and Psychotherapy in Tuberculosis in Civilian and Military Life. S. A. Knopf, New York.—p. 601.
Simplified Device for Chest Aspiration. M. A. Bridges, New York.—p. 605.
Diagnosis of Acute Conditions of Brain. J. V. Haberman, New York.—p. 606.
*Metastatic Carcinoma of Pleura. H. M. Feinblatt, Brooklyn.—p. 609.
Mercurial Poisoning by Absorption from Vagina. C. E. Rynd and M. C. Myerson, Brooklyn.—p. 610.
Treatment of Locomotor Ataxia and Proper Method of Giving Intravenous Injections of Mercury and Arsenic. C. G. Cusmton, Geneva, Switzerland.—p. 612.
Tryparsamide in Neurosyphilis. H. P. Hyder, Washington, D. C.—p. 613.
Morphologic Factor in Respect of Rheumatism and Other Affections of Joints. G. F. Crookshank, London.—p. 615.
Endocrines in Relation to Rheumatic Fever and Rheumatism Arthritis. L. J. Llewellyn, London.—p. 618.
Protein Shock in Treatment of Rheumatoid Arthritis. J. N. Cruickshank, Glasgow.—p. 621.
Course of Rheumatic Heart Disease. C. F. Coombs, Bristol, England.—p. 623.
Arthritis and Infection of Digestive Tract. N. Mutch, London.—p. 625.
Diet in Rheumatism. A. H. Wright, Toronto.—p. 628.

Metastatic Carcinoma of Pleura.—In the case reported by Feinblatt, the discovery of clusters of cells of malignant type in the sediment of a centrifugated specimen of pleural fluid facilitated the diagnosis of metastatic carcinoma of the pleura. The patient was a woman, 43 years of age, with a history of cancer of the left breast and a radical operation three years prior to her immediate illness, and who exhibited symptoms, signs and a radiographic picture of pleural effusion on the right side.

Nebraska State Medical Journal, Norfolk

10: 153-192 (May) 1925

Pathologic Physiology of Spleen. M. G. Wohl, Omaha.—p. 153.
Modern Aspects of Nutrition. V. E. Levine, Omaha.—p. 156.
Kielland Forceps. C. F. Moon, Omaha.—p. 163.
Radium in Gynecology. C. E. Sayre, Norfolk.—p. 168.
Pneumococcus Peritonitis. F. G. Kolouch, Schuyler.—p. 174.
Pernicious Anemia. G. I. McCrea, Table Rock.—p. 176.
Other Causes of Glaucoma. D. D. Sanderson, Lincoln.—p. 177.
Blood Nitrogen Method for Practitioner. M. J. Breuer, Lincoln.—p. 178.
Etiology and Prevention of Scarlet Fever. J. D. Reid, Pilger.—p. 179.
Fracture of Pelvis: Case. H. W. Orr, Lincoln.—p. 181.

Oklahoma State Medical Association Journal, Muskogee

18: 96-119 (May) 1925

Spasmodic Stenosis of Esophagus. R. N. Smith, Tulsa.—p. 96.
Responsibility for Preschool Child. J. P. Torrey, Bartlesville.—p. 99.
Primipara—Care and Delivery. C. Brydia, Ada.—p. 102.
Routine Technic in Management of Labor in Home. J. G. Binkley, Oklahoma City.—p. 104.
Maternal Mortality in United States. G. C. Mosher, Kansas City.—p. 107.

Philippine Journal of Science, Manila

26: 447-592 (April) 1925

Additions to Our Knowledge of Philippine Flora. I. E. D. Merrill, Berkeley, Calif.—p. 447.
Nicotine Content of Philippine Tobacco Stems. W. L. Brooke, Manila. —p. 497.
Semiselective Antiseptic Effect of Vapers of Vegetable Oils, Essential Oils, Their Constituents and Similar Compounds. O. Schöbl, Manila. —p. 501.
Some Far Eastern Muscide (Diptera). J. R. Malooch, Washington.—p. 507.

Parandes, New Cixiid Genus (Homoptera, Fulgoroidea). F. Muir, Honolulu.—p. 511.
Three New Hymenoptera from Philippine Islands. R. M. Fouts, Washington, D. C.—p. 515.
Internal Metazoan Parasites Collected from Ruminants in Philippine Islands. B. Schwartz, Washington.—p. 521.
Tenebrionides (Coleoptera) of Indomalay, III. H. Gebien, Hamburg, Germany.—p. 535.

Porto Rico Medical Association Bulletin, San Juan

19: 1-47 (April) 1925

Appeal to Legislators in Regard to Carity Medical Work. Committee Report.—p. 3.
Infant Mortality in Porto Rico. A. Fernós Isern.—p. 26.
*Modern Treatment of Bronchial Asthma. R. M. Suárez.—p. 31.
Asthma; Etiology and Treatment. Carlos González.—p. 37.
*Experiences with Intraspinal Anesthesia. F. R. De Jesús.—p. 40.

Treatment of Asthma.—Suárez remarks that the only two cases, out of forty treated with the old methods, which showed improvement were those in which he had accidentally stumbled on the cause of the anaphylactic condition inducing the asthma. In the last seven years his treatment based on discovery of the special irritating protein involved has been almost invariably successful. Different members of the same family may be affected by different proteins. He has found *shellfish* the most common cause for asthma in Porto Rico, but not the species incriminated in the United States. Only 30 per cent. failed to respond to tests for hypersensitization, and these he treated with regulation of the diet, breathing lessons and an autogenous vaccine. Two patients responded with anaphylaxis to a fungus from their sputum, and one improved under a vaccine made with it. In two cases an unsuspected tuberculous focus was discovered at the hilum.

Intraspinal Anesthesia.—De Jesús restricts this method of anesthesia to operations low in the pelvis. Its special advantages were evident in some cases he describes, including the case of a man of 70 with prostatic obstruction, high blood pressure and symptoms of uremia. The only by-effects he encountered were occasional transient headache before he abandoned stovain for procain. The intraspinal technic should be seriously considered, he says, in diabetes, toxemias, nephritis and eclampsia.

Public Health Journal, Toronto

16: 201-250 (May) 1925

Purity of Drugs. V. E. Henderson.—p. 220.
Milk and Dairy Inspection. J. B. Hollingsworth.—p. 223.
Educational Program for Child. A. D. Hardie.—p. 227.
Postgraduate Medical Education in Canada. G. S. Young, Toronto.—p. 234.

Radiology, St. Paul

4: 355-444 (May) 1925

Charcot's Joints. C. G. Sutherland, Rochester, Minn.—p. 355.
Congenital Syphilis of Bones and Joints. C. C. Dennie, Kansas City, Mo.—p. 364.
Cancer of Lip: Treatment by Means of Electrothermic Coagulation, Radium and Roentgen Rays. J. T. Stevens, Montclair, N. J.—p. 372.
Cellular Changes Observed in Irradiated Tissue, Especially of Cancer of Rectum. H. H. Bowing, Rochester, Minn.—p. 378.
Effects of Roentgen Ray and Radium Therapy on Tissues. H. R. Wahl, Kansas City, Kan.—p. 384.
Difficulty of Diagnosis of Carcinoma of Breast. M. B. Clopton, St. Louis.—p. 390.
Results of Radiologic Treatment of Carcinoma of Breast. J. F. McCullough, Pittsburgh.—p. 395.
*Is Cancer True Disease or Result of Condition of Change in General Organization of Organism? M. T. Burrows, St. Louis.—p. 407.
Radioactive Substances and Their Therapeutic Uses and Applications. J. Muir, New York.—p. 417.
Adamantine Tumors of Jaw. B. F. Schreiner and W. L. Mattick, Buffalo, N. Y.—p. 421.
Under-Exposure as Diagnostic Point in Cases of Non-Opaque Foreign Bodies in Bronchi. S. W. Donaldson, Ann Arbor, Mich.—p. 427.

Nature of Cancer.—Facts presented by Burrows are said to show quite definitely that cancer is not a disease in the sense of the infectious diseases, but that it is the normal reaction of body cells to a particular environment. It is to be classed, therefore, with gangrene and atrophy. Cancer comes into existence when the normal arrangement of cells and blood vessels is disturbed, so that the cells become sufficiently crowded in an area of reduced circulation. These conditions lead, in the presence of oxygen, to the formation or the accumulation of an active growth-stimulating substance.

South Carolina Medical Association Journal, Greenville

21: 113-136 (May) 1925

Annual Physical Examination. J. H. Cannon, Charleston.—p. 120.

Southern Medical Journal, Birmingham, Ala.

18: 315-386 (May) 1925

*Etiology of Gastric and Duodenal Ulcer. J. Friedenwald and T. H. Morrison, Baltimore.—p. 315.
*Duodenal Ulcer Simulating Gastric Crises of Tabes: Five Cases. G. B. Eusterman, Rochester, Minn.—p. 319.
Multiple and Recurrent Ulcers of Stomach and Duodenum. J. R. Verbrycke, Jr., Washington, D. C.—p. 324.
*Evil Results of Indiscriminate Removal of Tonsils in Adults. L. J. Moorman, Oklahoma City.—p. 330.
*Angina Pectoris. R. B. McBride, Dallas, Texas.—p. 334.
Eczema in Infants. D. L. Smith, Spartanburg, S. C.—p. 337.
Syphilophobia. E. B. Block, Atlanta, Ga.—p. 341.
Treatment of Skin and Mucous Membrane Cancers. J. A. Elliott, Charlotte, N. C.—p. 343.
Midwife Problem. E. R. Hardin, Lumberton, N. C.—p. 347.
*Hypertonic Solutions; Magnesium Sulphate; Value in Certain Types of Brain Injury. C. E. Dowman, Atlanta, Ga.—p. 351.
Hematuria of Renal Origin. J. W. Butts, Helena, Ark.—p. 356.
Dexterity Versus Force in Treatment of Fractures. J. D. Trawick, Louisville, Ky.—p. 359.
Varicocele of Broad Ligaments: Two Cases. E. A. Wilcox, Augusta, Ga.—p. 361.
Acute Retroperitoneal Appendicitis. D. C. Donald, Birmingham.—p. 364.
Head Injuries. A. G. Rutherford, Welch, W. Va.—p. 368.
Treatment of Nasal Ganglion. R. J. Payne, St. Louis.—p. 373.
Foreign Bodies in Air and Food Passages: Twenty-Five Cases. P. Stiles, Birmingham, Ala.—p. 376.

Etiology of Gastric and Duodenal Ulcers.—In a series of 200 cases of gastric and duodenal ulcers reviewed by Friedenwald and Morrison the following causative factors were noted: infections, 84 cases; disturbances of the nervous system, 28 cases; disturbances of the endocrine system, 8 per cent.; hyperchlorhydria, 17 per cent.; trauma, 4 per cent.; anemia (chlorosis), 28 per cent.; arteriosclerosis, 26 per cent., and syphilis, 5 per cent.

Duodenal Ulcer Simulating Gastric Crisis of Tabes.—In the five cases reported by Eusterman the lesions were in the duodenum, with only moderate obstruction, and in all pain was a negligible feature.

Tonsillectomy a Major Operation.—Moorman asks that tonsillectomy should be considered a major operation requiring months for complete convalescence, and should be employed only when indications are fairly clear and of sufficient significance to justify such a procedure.

Angina Pectoris.—Of thirty-four cases of true angina pectoris seen by McBride and an associate, twenty-five patients described their pain as being substernal, eight precordial, seven epigastric, six into the left arm, four into both arms, two in the right arm, two in the left hypochondrium, and one in the left wrist. In all the pulse rate was much slower than normal, becoming more rapid when relief was obtained by nitrites. Systolic blood pressure rose in each case above the patient's normal until nitrites were given. As relief was being obtained, the pressure fell from 30 to 40 millimeters to rise again after a variable period of time to slightly above the normal for the individual. The blood pressure estimates taken in an interval were: systolic, lowest 110, highest 200, with an average of 143; diastolic, lowest 65, highest 120, average 90. Associate conditions were myocarditis, 23 cases; general arteriosclerosis, 15 cases; oral sepsis, 13 cases; aortitis, 7 cases, and syphilis, 1 case.

Use of Hypertonic Solutions in Brain Injuries.—Experience has led Dowman to give a series of brian injury cases 10 c.c. of a 10 per cent. solution of magnesium sulphate intravenously every four hours, for six or eight doses, after which the drug is given by mouth. All of these cases progress satisfactorily and so far have given no evidence whatsoever of magnesium sulphate poisoning. In one case very rapid disappearance of subcutaneous edema prompts the suggestion that this type of medication might perhaps be of value in edema of the lungs.

Tennessee State Medical Association Journal, Nashville

17: 365-403 (April) 1925

Present Unsettled and Chaotic Condition of Medical Profession. F. D. Smythe, Memphis.—p. 365.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

37: 259-300 (June) 1925

Chronic Erythema of Legs in Girls and Young Women, Sometimes Leading to Diffuse Thickening and Sclerodermia-Like Induration of Skin and Subcutaneous Tissue Without Nodules or Ulcers. F. P. Weber.—p. 259.
Purpura Annularis Telangiectodes. S. E. Dore.—p. 263.
Sensitization of Skin to Sunlight: Treatment by Peptone Injections. W. F. Castle.—p. 267.
Cat Ringworm. M. S. Thomson.—p. 269.

Bristol Medico-Chirurgical Journal

62: 73-156 (No. 156) 1925

*Asthma. J. R. Charles.—p. 84.
Diagnosis of Dyspepsias. A. R. Short.—p. 88.
Present Position of Surgery of Nervous System. P. Sargent.—p. 101.
*Case of Intrathecal Extramedullary Spinal Tumor. A. W. Adams.—p. 116.
Differential Diagnosis of Focal Infection in Nasal Sinuses Causing Ocular and Other Systemic Infections. P. Watson-Williams.—p. 121.

Pressure Asthma.—Charles cites the case of a man who throughout his life had been subject at intervals to typical asthmatic attacks. He would wake up at 2 or 3 a. m. with severe dyspnea and all the usual symptoms of asthma, which would clear up in the usual way, leaving him free from it the following day, perhaps to be repeated on subsequent nights. Climate had a great deal to do with these attacks. Treatment being of no avail, a roentgen-ray examination was made. It showed a definite shadow in the mediastinum on the right side bending the trachea over to the left, which proved to be due to an intrathoracic adenoma of the thyroid. The tumor was successfully removed and since then no asthmatic atacks have occurred.

Diagnosis of Spinal Tumor with Aid of Lipiodol.—The case cited by Adams demonstrates the use of the intrathecal injection of lipiodol as a precise means of localizing compression of the spinal cord, and what becomes of the solution. The symptoms pointed to a tumor within the vertebral canal causing pressure on the cord about at the level of its eighth dorsal segment. This was confirmed by a positive Froin's syndrome and the injection of lipiodol and radiography. What becomes of the lipiodol was shown in an interesting way by the roentgenogram taken three months after operation. Since the removal of the obstructing tumor it had trickled down to the level of the fifth lumbar vertebra. Very little absorption seems to have occurred, which points to the inert nature of the injected lipiodol.

British Journal of Ophthalmology, London

9: 257-320 (June) 1925

Sir Jonathan Hutchinson. R. Godlee.—p. 257.
Literature on Crystalline Lens. D. R. Adams.—p. 281.
Hematoma of Cornea. G. Young and A. W. D'Ombrain.—p. 299.

British Medical Journal, London

1: 1027-1064 (June 6) 1925

*Infundibulin. W. B. Bell.—p. 1027.
*Treatment of Congenital Club Foot. B. W. Howell.—p. 1031.
*Diabetic Treatment Simplified. F. C. Eve.—p. 1033.
*Schick Test and Active Immunization Against Diphtheria. J. P. Watt.—p. 1035.
*Jejunocolostomy in Treatment of Acute Spreading Peritonitis. A. J. Blaxland.—p. 1037.
Anencephalic Fetus. D. S. Richmond.—p. 1038.
Case of Acute General Tetanus. R. R. Foote.—p. 1038.

Infundibulin.—Bell discusses the indications for the use of infundibulin in surgical and obstetric practice. He urges that infundibulum must always be employed with care, and with a due regard to the scientific indications in every case. The greatest harm and the gravest disasters have occurred in obstetric practice from the injudicious use of this potent substance during labor.

Treatment of Congenital Clubfoot.—Howell emphasizes the fact that the treatment of congenital clubfoot must commence from the moment of birth, when the structures in the foot are soft and pliable, and little pain or shock is experienced by the infant. The principles of treatment are to stretch the contracted structures causing the deformity, and to relax and then educate those muscles which will restore the muscle balance of the foot. The usual methods are by splinting with malleable iron, by adhesive strapping, by plaster of Paris, by clubfoot tin shoes, and by operation (Thomas wrench, etc.). The prognosis is excellent in those cases seen early, and fair in neglected and "relapsed" cases, and in those children who have already been operated on. Treatment is more difficult, and the results not so satisfactory, in children with "stubby" heels, talipes calcaneovalgus, or simple midtarsal varus.

Diabetic Treatment Simplified.—Eve puts the diabetic gradually on a diet free from carbohydrate, and if sugar persists and no ketones appear, he diminishes the quantity. If ketones appear, from 1 to 3 ounces of bread (weighed) is added, and enough insulin injected to bring the sugar almost to zero. Or weekly "starvation days" on greens, bouillon, and coffee may obviate the necessity for insulin.

Active Immunization Against Diphtheria.—Watt is convinced that if toxin-antitoxin inoculation against diphtheria were adopted generally it would lead to a great diminution in the incidence of the disease and to a still greater diminution in the case mortality.

Jejunocolostomy in Acute Peritonitis.—In a case cited by Blaxland the patient had acute spreading peritonitis, and was very obviously going down hill. A jejunocolostomy was performed with immediate beneficial result, and the peritonitis completely subsided in two weeks' time. A sloughing ischiorectal abscess unfortunately developed, and the patient died from its effects on the twenty-sixth day after the operation.

China Medical Journal, Shanghai

39: 383-478 (May) 1925

Amebiasis; Yatren Treatment. J. F. Kessel and O. Willner.—p. 383.
*Hemoptysis in Pulmonary Tuberculosis. C. Hsi-ang.—p. 397.
*Bronchial Spirochetosis in Canton. W. W. Cadbury, L. N. Jeu and J. L. Harvey.—p. 408.
Present Status of Bronchoscopy and Esophagoscopy. J. H. Liu.—p. 414.
*Mercurochrome in Treatment of Chronic Malaria. D. B. Avison and B. Koo.—p. 419.
League of Nations Grading of Far Eastern Ports. C. E. Lim.—p. 422.

Hemoptysis in Pulmonary Tuberculosis.—Hsi-ang states that hemoptysis is extremely common among Chinese. The routine physical examination of 1,270 apparently healthy students revealed that nearly 7 per cent. suffered from hemoptysis.

Bronchial Spirochetosis in Canton.—Four cases are reported by Cadbury, Jeu and Harvey in which the sputum showed spirochetes, but tubercle bacilli could not be found. A roentgenogram was taken of three patients and in two there was evidence of pulmonary tuberculosis, which was confirmed by the subcutaneous tuberculin test. In the third, the roentgenogram was negative. Neo-arsphenamin was given to the two tubercular patients with marked improvement and the disappearance of spirochetes from the sputum. A similar result was obtained in the third case with sodium cacodylate.

Mercurochrome in Chronic Malaria.—The treatment of chronic malaria by a single intravenous injection of mercurochrome (0.003 gm. per kilogram of body weight in a 1 per cent. solution) has given a cure in 100 per cent. of the cases treated by Avison and Koo.

Edinburgh Medical Journal

32: 281-140 (June) 1925

*Radical Cure of Hernia in Infants and Young Children. G. Herzfeld.—p. 281.
*Ruptured Aneurysms of Abdominal Aorta Due to Tuberculosis. W. A. Dafoe.—p. 291.
Cyst of Vomeronasal Organ. J. J. Levin.—p. 296.
Case of Adenoma of Bile Ducts. R. C. Alexander.—p. 301.
Treatment of Spastic Paralysis by Sympathetic Ramisection. W. Q. Wood.—p. 305.

Radical Cure of Hernia in Infants.—Of 1,000 consecutive cases of hernia in children, Herzfeld says inguinal hernia predominates largely over all other forms, 87.7 per cent.; 11.9 per cent. were umbilical cases, the remainder were femoral and epigastric. Abnormality in descent of the testicle was noted in thirty-two cases. In seven cases the bladder formed part of the inner wall of the sac. Minute bright yellow bodies, which, on microscopic examination, were seen to be derived invariably from the suprarenal body, were noted in four cases. Tuberculous disease of the sac was found in thirteen cases, and in four of these the disease had spread to the testicle and epididymis and necessitated orchidectomy. Enlarged mesenteric glands were palpated in the abdomen in about 15 per cent. of cases. Only one death occurred in this series. One infant, aged 4 months, died on the operating table before the operation had been commenced, and was apparently the subject of a status lymphaticus.

Ruptured Aortic Aneurysm Due to Tuberculosis.—In one of the cases cited by Dafoe the rupture of the aorta was due to the spread of a tuberculous process of its adventitia and media from an attached tuberculous lymph gland. The changes produced in the aorta, which were especially marked in the medial layer, led to the formation of the aneurysm. About twelve days before death, the patient complained of the sudden attack of acute pain in the upper right abdomen. The true aneurysm had probably ruptured and formed a false aneurysm. Finally death was caused by the rupture of the false aneurysm and hemorrhage. In the origin and course of production of the aneurysm the second case was similar to the first one.

Indian Medical Record, Calcutta

65: 129-160 (May) 1925

Race, Class, Sex and Age Incidence of Kala-Azar. A. C. Chatterjee. —p. 129.
Biochemistry of Thyroid. A Roy.—p 1333
Smallpox and Measles. K. C. Dutt.—p. 139.

Japan Medical World, Tokyo

5: 119-143 (May 15) 1925

*Etiology of Raynaud's Disease. S. Iwai and N. Mei-Sai.—p. 119.
Special Features of Shape of Chest of Tubercular and Healthy Japanese. U Hasegawa.—p. 121.

Etiology of Raynaud's Disease.—Iwai and Mei-Sai are of the opinion that Raynaud's disease has its pathogenicity in the action of a strongly powerful auto-agglutinin which has its full power only in cold atmospheric environments.

Journal of State Medicine, London

33: 251-300 (June) 1925

Moslem Pilgrimages and International Control of Disease. F. G Clemow.—p 251.
Importance of Education on Health in Work of Public Health Department. W. A. Daley.—p 270.
Outline of History of Plague in Hong Kong. A. G M. Severn.—p 274.
Chronic Sepsis in Relation to Malignant Disease. F. St J Steadman.—p. 285.

Lancet, London

1: 1065-1116 (May 23) 1925

Signifiance of Ocular Symptoms. P. Flemming.—p. 1065.
Miners' Nystagmus. A. F. Fergus—p 1068
*Treatment of General Paralysis and Tabes by Tryparsamide. W. S. Dawson.—p. 1072.
*Three Cases of Unusual Forms of Lipoma of Breast. D. C. L. Fitzwilliams—p. 1074.
*Diabetes, Surgical Infections and Insulin. R. Carrasco Formiguera.—p. 1576
Diverticulum of Pharynx. J. W. Thomson.—p. 1678.

Treatment of General Paralysis and Tabes by Tryparsamide.—In none of the twenty cases cited by Dawson was there produced any remarkable result from the use of tryparsamide such as might not have been obtained by the administration of other arsenic compounds. Several cases of paresis have had their downward course arrested, while others have improved to a lesser extent. Whether tryparsamide is really more potent than other arsenicals is not proved in this series of cases, but the drug is certainly worth further trial.

Lipoma of Breast.—In the first case reported by Fitzwilliams there was a local intramammary lipoma and a scirrhus tumor in the same breast. In the second case there was a large diffuse intramammary lipoma occupying and distending both breasts. In the third case there was a fatty tumor in one breast and a scirrhus in the other. The lipoma showed the unusual occurrence of the deposition of calcium salts in the fatty cells.

Diabetes, Surgical Infections and Insulin.—From personal experience of cases of surgical infection in diabetic patients and of their treatment by insulin Carrasco-Formiguera is convinced that even in the more severe cases of infection in diabetic patients it is always possible (unless there is not enough time before the patient dies) to attain a normal blood sugar level if insulin be used in large enough doses, properly spaced, throughout the day. It may be difficult, or even impossible, to keep the blood sugar level absolutely normal, but it may be kept so most of the time and not far from normal the rest of the time. Such a result may be obtained without any dangerous underfeeding, which must be carefully avoided. In fact, with an adequate combination of diet and insulin such patients may be kept sugar-free and at the same time well nourished, much better than would be possible by any other measures, dietetic or otherwise.

1: 1173-1228 (June 6) 1925

Pneumonia Incidence and Climate in India. L Rogers—p 1173.
Skin Tests, Asthma and Idiosyncrasy. F. G. Chandler.—p. 1177.
Cancer of Breast. S. Wyard.—p. 1179.
*Case of Recurrent Pneumothorax. L. T. Burra.—p. 1182.
*Treatment of Psoriasis. E. C. B. Ibotson.—p. 1182.

Recurrent Pneumothorax.—Burra's case is of interest as one in which there was recovery from pneumothorax, with a liquid effusion, and a recurrence of the condition about five years later with fatal issue.

Treatment of Psoriasis.—Thyroid extract internally, 1 grain, three times daily, combined with the external use of tar, is advocated by Ibotson as good treatment for psoriasis.

1: 1229-1278 (June 13) 1925

Interpretation of Electromyogram. E. D. Adrian.—p. 1229.
*Tuberculosis in Tropics J. K. Fowler.—p. 1233.
*"Periodicity" of Cholera in India. A. J. H. Russell.—p. 1237.
Case of Hemophilia. W. B Burke.—p. 1237.
Coagulen (Ciba) for Hemoptysis. A. J. Morland.—p. 1238.

Tuberculosis in Tropics.—Fowler concludes his address with the statement: Any country that rejects compulsory vaccination and retains its slums must pay for smallpox hospitals and tuberculosis settlements. The tuberculosis problem is to a very large extent a housing problem in all parts of the world.

Periodicity of Cholera in India.—Russell says that cholera in Madras Presidency, for a period of twenty-five years has gone through a regular six-yearly cycle. No such periodic trend has previously been demonstrated in connection with this disease. The same six-yearly periodicity has occurred in Bombay Presidency, the Punjab, the United Provinces, the Central Provinces, and in Mysore over the period 1896-1923. This fact is of far-reaching importance in connection with the measures usually utilized for prevention of the disease.

Medical Journal of Australia, Sydney

1: 499-526 (May 16) 1925

Hand in General Practice. D. A. Cameron.—p. 499.
Attempt to Interest Those Engaged in General Practice in Two or Three Ophthalmologic Matters. J. L Gibson.—p 504
Case of Exstrophy of Bladder. D. A Cameron—p. 509.
Lipoma of Cervical Region J. C. Shand, Jr.—p. 510.

Practitioner, London

114: 385-446 (June) 1925

Relief of Catarrhal Deafness J. Dundas Grant—p. 385
Cancer and Cysts of Breast D. C. L. Fitzwilliams—p 394.
Routine Treatment of Syphilis. L W. Harrison—p. 400
Mechanism of Cardiac Failure. B T. Parsons Smith.—p 409.
Constipation and Pregnancy. C. S. Lane Roberts—p. 426.
Constipation and Its Radical Treatment A S. Gillett—p. 431.
*Two Cases of Acute Lymphatic Leukemia D Hall—p. 436
Value of Quinin Bihydrochlorid Combined with Pituitary Extract in Labor. T. J Ryan.—p. 438.

Acute Lymphatic Leukemia.—Of the two cases of acute lymphatic leukemia reported by Hall, the first conformed to the ordinary type, but in the second so sudden were the onset and the progress of the disease, that the patient was dead ere he had realized that he was ill, and there was barely time in which to make the diagnosis. A clergyman, aged 42, had had "a sunstroke" during the summer and had complained of vertigo since. He consulted a physician, December 28, for a small sore on the lower lip. On the thirty-first the sore was nearly well, but he noticed bruises on his chest and complained of headache. When Hall saw him he had in all eight "bruises," varying in size, on the chest, legs and arms, and also a few discrete petechiae, of which three were on the buccal mucous membrane. The original sore was just visible. On one occasion there had been slight bleeding from the right nostril. Apart from the fact that he appeared more than his age, the man looked well. His color was particularly good. A careful search was made for enlarged glands but none were found superficially, nor was there any evidence of enlargement of the deep glands. The liver and spleen were not enlarged and there were no cutaneous nodules. By Tallqvist's scale the hemoglobin was estimated at 85 per cent. Blood coagulation appeared to be normal. To the patient himself, the diagnosis was made of "purpura," and he was told that he must remain in bed, against which decision he protested strongly, for he said that, apart from headache, he felt perfectly well. The following day he had what was described as "a fit." He was found comatose, with unequal pupils. Death followed some hours later, the immediate cause evidently having been extensive meningeal hemorrhage.

South African Medical Record, Cape Town

23: 177-200 (May 9) 1925

*Inoculated Malaria. A. Pijper and E. D. Russell.—p. 178.

Inoculated Malaria.—Pijper and Russel assert that in early cases of simple tertian malaria an injection of neoarsphenamin is a therapia magna sterilisans. Such an injection has a provocative action on latent malignant tertian malaria, while curing a simple tertian infection. Inoculated simple tertian malaria causes a mild leukopenia, and the leukocyte curve, on the whole, runs parallel to the parasite curve. Certain deductions as regards immunity can be made from the relative height of the two curves. The authors state that many of their observations suggest a particularly active participation of the bone marrow in the pathogenesis of malaria.

Archives des Maladies du Cœur, etc., Paris

18: 273-352 (May) 1925

*Diabetic Arteritis. M. Letulle et al.—p. 273.
Paroxysmal Tachycardia. G. N. Martinez.—p. 292.
Paroxysmal Ventricular Tachycardia. T. Castellano.—p. 301.
Case of Pulmonary Stenosis. Scremini and Montes-Pareja.—p. 305.
Vaquez' Disease with Arteriosclerosis. E. Schisler.—p. 308.

Arteritis in Diabetes.—Letulle, Labbé and Heitz relate that the necropsy findings in a diabetic woman, aged 55, showed atheromatous lesions in the peripheral arteries. Owing to the hypercholesterolemia, cholesterol was retained in the inflamed intima of the arteries, thus promoting hyperplasia and obliteration of the vessels. Clinically, it was manifested by phenomena of ischemia: intermittent claudication and fatal cerebral hemorrhage.

Bruxelles Médical, Brussels

5: 830-862 (April 19) 1925

Adjuvant Measures in Treatment of Glaucoma. F. Terrien.—p. 830.
Tertiary Syphilitic Adenopathies in Morocco. Salle.—p. 835.
*Unsuspected Pregnancy Carried to Term. R. Beckers.—p. 843.
Intraspinal Anesthesia in Obstetrics. Vaudescal.—p. 845.

Unsuspected Pregnancy Carried to Term.—Beckers points to the obstetric and medicolegal interest of the case he reports, in an actress, aged 30, inclined to corpulence, with three children, aged 3, 4 and 5, and a history of constantly normal pregnancies and deliveries. During the pregnancy she made a professional tour, menstruating apparently regularly, unaware of her condition until revealed by dribbling of amniotic fluid just before delivery. The uterus then was about the size of the fifth or sixth month. No fetal sounds were audible, but palpation confirmed the impending delivery, which proceeded normally, with a normal, living child, weighing nearly 6 pounds.

Bulletin de l'Académie de Médecine, Paris

93: 523-548 (May 12) 1925

Advantages of Fish for Food. Committee Report.—p. 533.
*Infections Masking Tuberculosis. P. Courmont and Boissel.—p. 535.
Auscultation by Telephone and Radio. R. Lutembacher.—p. 540.
Minor Signs of Tuberculosis. Nigoul-Foussal.—p. 542.
*Prognosis of Urologic Operations. Blum and van Caulaert.—p. 544.

Infections Masking Pulmonary Tuberculosis.—Using fresh and rinsed sputum, Courmont and Boissel found the tubercle bacillus associated with one or several other microbes in fifty-seven of 297 cases of tuberculosis. After the appearance of the associated microbe, the tubercle bacillus may disappear definitely, or reappear afterward, thus presenting an alternating or a permanently substituted infection. In the fifty-seven cases observed, the infection in twenty-seven was of the substituted type. The prognosis of the tuberculous affection may depend on the coexisting micro-organism.

Import of Acidosis in Urologic Surgery.—Blum and Caulaert point out that patients with a normal or slightly modified alkali reserve (50-60) bear an operation on the urinary tract well, while in those with a reduced reserve (below 40) the prognosis of an operation is unfavorable. As in diabetics with pronounced acidosis, general anesthesia may prove fatal by aggravating the acidosis. An operation is contraindicated even if the uremia is slight.

93: 549-571 (May 19) 1925

Remote Results of Deep Roentgen Ray Treatment. P. Bazy.—p. 557.
"The Academy of Medicine and Social Hygiene." P. Cazeneuve.—p. 561.
Capillaroscopy. A. C. Guillaume.—p. 564.
*Prophylactic Vaccination in Surgery. E. Blanco-Acevedo.—p. 567.

Polyvalent Vaccine in Prevention of Postsurgical Infection.—Blanco-Acevedo obtained excellent results with systematic vaccination preceding an operation. No fatal outcome, phlebitis or embolism occurred in his 389 gynecologic operations. The efficiency of the vaccination is ascribed to the general reaction induced. Three subcutaneous injections of from 2 to 4 c.c. of a polyvalent vaccine were made at three day intervals, the last injection preceding the operation by three days.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 671-720 (May 8) 1925

Mercurochrome in Endocarditis. G. Caussade and E. Lafont.—p. 671.
Asthenia in Congenital Syphilis. M. Pinard.—p. 679.
*Serum Prophylaxis of Measles. R. Debré et al.—p. 682.
*Pathogenesis of Myasthenia. G. Marinesco.—p. 690.
Arterial Hypertension and Glucose Balance. Labbé and Denoyelle.—p. 699.
*Iodized Oil Reveals Pott's Disease. Oudard and Solcard.—p. 704.
Mediastinal Form of Hodgkin's Disease. Clément and Cayla.—p. 706.
Angina Pectoris with Myxedema. P. Abrami et al.—p. 712.

Prophylactic Efficacy of Serum from Persons with Measles History.—Debré and his co-workers obtained excellent results with the serum of adults with an old history of measles. They report, among other instances, the preventive injections in an asylum during an epidemic of measles. None of the children treated contracted the disease. The serum used in the beginning of the incubation stage prevented the disease in 75 per cent.; in 20 per cent. the disease occurred in an attenuated form, and in five the injection did not influence the course of the measles. A dose of 12-15 c.c. of serum was used in infants not over 2 years, and 20-25 c.c. above this age. Mixed serums from several persons are preferred, since the content of antibodies in one serum may be insufficient. Serum from parents should be preferred, even if twenty or thirty years have elapsed since they had the disease. Serum from persons in contact with measles patients proved to be efficient, as also the serum from persons convalescent from other infectious diseases. The serum from persons who had had measles long before may contain antibodies against other infections, often associated with measles.

The Sympathetic System in Myasthenia. — Marinesco emphasizes that myasthenia is due to changes in the sympathetic system. Vasomotor disturbances affect the muscle metabolism; waste products are retained in the muscles and in the walls of the capillaries, inducing dilatation of the vessels. This explains the exhaustion of muscle activity, the decrease of oxidizing ferments, and the accumulation of glycogen and lipoids in the muscle fibers. The condition improved considerably under epinephrin and suprarenal extract.

Iodized Oil in Diagnosis of Spondylitis.—Oudard and Solcard describe a case with clinical signs of osteitis of the ileum. Roentgenograms with iodized oil revealed the existence of a tuberculous spondylitis affecting the fourth lumbar vertebra.

Comptes Rendus de la Société de Biologie, Paris

92: 1173-1260 (May 8) 1925. Partial Index

*Latent Hermaphrodism. Lipschütz et al.—p. 1179.
*Variety of Typhoid Bacillus. S. Ramsine.—p. 1188.
*Cancer and Klossiella Muris Infection. C. Bonne.—p. 1190.
*The p_H in the "Prostaxia" Reaction. R. Fischer.—p. 1192.
Test for Protein Traces. P. Lecomte du Noüy.—p. 1194.
Vaccination with Ether-Virus Against Rabies. Remlinger.—p. 1195.
*Passage of Trypanosoma Through Tissues. E. Iwanow.—p. 1198.
Fibrinogen in Cerebrospinal Hyperalbuminosis. Perisson et al.—p. 1201.
Structure of Enamel. E. Retterer.—p. 1203.
*Blood Platelets and Shock. C. Klecki and C. Pelczar.—p. 1206.
*Procedure for Glycuronic Acid Test. M. Brulé et al.—p. 1216.
*Thyroid Test. G. Laroche and Wolff.—p. 1218.
*Prothrombin in Hemophilia. R. Feissly.—p. 1220.
*Action of Splenectomy on Cancer. N. Dobrovolskaia-Zavadskaia and N. Samssonow.—p. 1222.
*Irradiation and Cancer Receptivity. Lacassagne and Samssonow.—p. 1224.
Feminization with Ovarian Grafting. V. Pettinari.—p. 1228.
Heterologous Cancer Grafts. J. Gheorghiu.—p. 1232.
Rôle of Connective Tissues in Tumors. M. Caudière.—p. 1235.
Sulphur in Mercury Poisoning. S. F. Gomes da Costa.—p. 1241.
*Posterior Lobe of Pituitary. A. Celestino da Costa.—p. 1246.
Chromatolysis in Graafian Follicle. A. L. Salazar.—p. 1247.
Placenta and Group Agglutination. Hirszfeld and Zborowski.—p. 1253.
Micromethod in Diphtheria. Z. Milinska-Szwojnicka.—p. 1256.

Latent Glandular Hermaphrodism.—Lipschütz, Perli and Svikul's experiments in guinea-pigs showed that sensitizing products from cell autolysis, owing to abnormal spermatogenesis, may attenuate or check the inhibiting action of the testicle on the female hormone. A latent glandular hermaphrodism may thus become evident, due to the passage of these sensitizing substances into the circulation.

Prognosis with a Modified Form of Typhoid Bacillus.—Blood cultures in Ramsine's two cases with the clinical picture of typhoid fever revealed the presence of a modified typhoid bacillus, resembling rather the colon bacillus. The bacillus was agglutinated by the patient's serum at 1 to 100, and the typhoid bacillus at 1 to 1,000. Evidently the bacillus represents a retrogressive transformation of the typhoid bacillus, occurring with changes in the immunization property of the organism. The prognosis with this form of typhoid bacillus is grave.

Klossiella Muris as Factor of General Infection. — Bonne found this protozoon in mice treated with tar for experimental cancer. He assumes that the schizont form of development of the protozoon occurs in the endothelium of certain organs (lung, spleen, kidney), and the sporont form in the renal tubules. No connection could be established between the presence of the protozoon and cancer.

Changes of p_H and Prostaxia Reaction in Serum.—Fischer recalls his method for serum diagnosis of cancer based on the fact that gelatin enforces, or stabilizes the protein dispersion (condition of prostaxia) in normal serum, while it destabilizes this phase in cancer cases, causing more pronounced flocculation. His further research has shown that the reaction depends on the hydrogen ion concentration in the gelatin serum mixture. With an alkaline gelatin (p_H 8.35) the reaction is always negative, the serum being stabilized. With acid gelatin (p_H 5.5) the serums are destabilized, and the reaction becomes positive. With p_H of 5.5 to 7.4 (the latter being the p_H of normal blood), the reaction is the reverse in normal serum and in cancer serum.

Trypanosoma Equiperdum Does Not Pass Through Sound Tissue.—Iwanow introduced the trypanosoma into the vagina of mice and of rabbits; also in the eyes of mice. The results indicated that the parasite does not pass through a mucous membrane free from erosions, and therefore infection does not occur.

Blood Platelets in Shock.—Klecki and Pelczar's research on rabbits and guinea-pigs showed that the blood platelets do not play an important rôle in anaphylactic shock. Destruction of the platelets can at most only enhance peristalsis, lower the refractometric index, and produce leukopenia in alimentary shock. The experiments demonstrated the fever-producing action of the platelet substances.

Sources of Error in Glycuronic Acid Test.—Brulé, Garban and Amer describe a procedure aiming to avoid mistakes with Tollen's reaction for ascertaining the presence of glycuronic acid in the urine. They affirm that while other methods showed absence of glycuronic acid, with their technic the reaction was always positive in pathologic urines, especially in cases of grave liver disease. They list the sources of error.

Value of Thyroid Extract Test.—Laroche and Wolff applied the thyroid extract test in twenty-one persons. Their conclusion is that the reaction is as valuable in hyperexcitability of the vagus, as Goetsch's reaction in hyperexcitability of the sympathetic. A weakly positive test in hypothyroidism, and a negative test in certain cases of hyperthyroidism confirm that the diagnosis of hyperthyroidism cannot be based with certainty on these two reactions. The test had been devised by Parisot and Richard: Retardation of the pulse by 10-30 beats per minute after injection of a large dose of thyroid extract was claimed as a sign of hyperthyroidism.

Speed of Transformation of Prothrombin into Thrombin in Hemophiliacs.—Feissly states that the transformation of prothrombin into thrombin in the plasma was evident thirty minutes after blood transfusion while before transfusion it required two or three hours. This acceleration of the formation of thrombin in the plasma of hemophiliacs after transfusion of total blood or of citrated plasma, observed in vitro, explains the changes in blood coagulation from transfusion.

Influence of Splenectomy on Experimental Cancer.—Removal of the spleen in rats and mice did not seem to increase the receptivity of the animals to cancer grafts. The natural immunity in certain animals against the tumor did not vanish immediately after the splenectomy, but possibly disappeared with repeated grafting. The results, Dobrovolskaia-Zavadskaia and Samssonow say, were identical with grafts of epithelioma and of sarcoma.

Effect of Roentgen Rays on Local Receptivity to Cancer.—Preliminary irradiation of the region, where cancer was to be implanted afterward, did not influence the development of the tumor, while the grafts irradiated before implantation did not take.

The Posterior Lobe of the Pituitary.—Celestino da Costa ascribes the importance of the posterior lobe of the pituitary to a transient deposit in it of the colloid product elaborated in the intermediary lobe, passing afterward into the ventricle.

Journal de Chirurgie, Paris

25: 385-512 (April) 1925

*Postoperative Peptic Ulcers. X. Delore and J. Creyssel.—p. 385.
Fracture of the Condyles of the Tibia. Brocq and Panis.—p. 417.

Peptic Ulcer.—Delore and Creyssel analyze their experience with twenty-five instances of postoperative peptic ulcer in twenty-one patients, some having had more than one. The recurrence was in the stomach in two or three of the cases. It alternated with the jejunum in some, showing that the same factors were at work in both. The primary ulcer was in the lesser curvature or the duodenum in a few cases, and the nature of the operation seemed immaterial for the development of the peptic ulcer. The soil seems to be exclusively responsible, they say, a kind of *maladie ulcéreuse* which yet does not seem to be a general diathesis. One case is suggestive; the peptic ulcers had developed in turn after three separate resections, but the patient returned for an operation at the very first hint of the fourth recurrence, and the cure has been permanent since this. Resection of the peptic ulcer with restoration of the passage was done in twenty-three of the twenty-five, and there was no fatality.

Journal de Médecine de Bordeaux

102: 357-400 (May 10) 1925

Medical Science as It Is Taught. R. Cruchet.—p. 357.
*Disinfection of Contaminated Books. J. Touchais.—p. 359.
Case of Recurrent Measles. J. Vergely.—p. 370.
Case of Meningococcus-Pneumococcus Meningitis. Sabrazès et al.—p. 371.

Disinfection of Tubercle Bacilli in Books.—*Touchais'* experiments in guinea-pigs showed that tubercle bacilli from books were still virulent 135 days after contamination. This occurred notwithstanding the action of light and desiccation in the show window. Disinfection of books with fumes and steam of formaldehyd and water, at a temperature of 75 or 95 C. during one hour, may give excellent results. The books are not damaged, since paper tolerates 180 C. and the binding 95 C. This method has been used with satisfactory results at Nantes for many years.

Journal de Médecine de Lyon

6: 227-262 (April 20) 1925

*Use of Thorium in Gouty Rheumatism. Roque and Chevallier.—p. 227.
Joint Lesions in Leprosy. V. Cordier and J. Dechaume.—p. 235.
Nephritis of Rheumatic Origin. J. Chalier and P. Delore.—p. 243.
Acute Rheumatism and Tuberculosis. Nové-Josserand.—p. 251.
Rheumatism with Dysentery. L. Morenas.—p. 255.
*Salicylate and Acidosis. P. Delore—p. 259.

Inhalations of Thorium Emanation in Treatment of Rheumatism.—Roque and Chevallier affirm that the inhalations may be effectual in the initial stage of chronic rheumatism, with periarticular lesions and bone changes presenting only urate infiltrations. In cases with exostoses, intramuscular injections of thorium X are preferred. Thorium emanation is contraindicated in acute forms of the disease on account of its congestion-inducing action. In the subacute form, the thorium does not exert any effect. Thorium proved successful in certain patients with rheumatism of ten or fifteen years' standing, refractory to all other treatment. Three of their patients took inhalations daily of from 70 to 90 units, in one, three or four sittings, continued from fifteen to thirty days.

Prevention of Acidosis with Sodium Salicylate.—Delore emphasizes that complications from the drug are due to a condition of acidosis, and may be avoided by adding a double dose of sodium bicarbonate, and by giving repeated but small doses of the salicylate.

Journal des Praticiens, Paris

39: 273-288 (April 25) 1925

*Treatment of Congenital Syphilis. Marfan.—p. 273.
Duodenal Ulcer. A. Huguier.—p. 277. Cont'n.
Meningeal Form of Endocarditis. N. Fiessinger.—p. 282.

Treatment of Congenital Syphilis in the New-Born.—Marfan applies mercurial ointment to infants with congenital syphilis. Otherwise he prescribes a solution of mercury lactate or gray powder by mouth. In infants above 1 year, a solution of mercuric biniodid is used in subcutaneous injections. Intravenous injections of mercury cyanid are valuable in cases with complications in the eyes.

Lyon Chirurgical

22: 129-292 (April) 1925

*Conservation of Anal Sphincter. Villard and Ricard.—p. 129.
*Resection of Peripheral Nerves. Cottalorda and Filippini.—p. 161.
Surgical Treatment of Sclerocystic Ovaritis. G. Cotte.—p. 173.
Tumor on Perineum of New-Born Infant. J. F. Martin et al.—p. 190.
*Exposure of Rami Communicantes. Leriche and Wertheimer.—p. 200.

Conservation of Sphincter in Removing the Rectum.—When the lower limit of the cancer can be just reached with the tip of the finger, and the Douglas pouch has been invaded, the abdomino-transanal amputation technic described may be the ideal operation. It does not even inevitably require an artificial anus. Of the ten patients operated on by this technic, two are still living in good health and continent, more than three years since the operation, and two have died from intercurrent disease. The outcome is not known in one case.

Resection of Peripheral Nerves.—Cottalorda and Filippini compare the ultimate outcome in treatment of trophic lesions with periarterial sympathectomy (10 cases) or the Moreschi combined method (5) or simple Moreschi resection of nerves (5). Each method was followed by great improvement, and varicose ulcers and mal perforant were usually permanently cured. Moreschi's incision, entirely around the leg, cuts down to the aponeurosis at the garter point, and the accessible nerve, the internal saphenous is resected for 3 cm. at least. This acts on both the vessels and the peripheral innervation, and was constantly successful. The operation on the nerve or nerves, as in this case, may answer the purpose alone, especially for simple ulcer; periarterial sympathectomy seems preferable for varicose ulcers. If these procedures fail of permanent benefit, it is useless to repeat them when a "dead point" has been reached. Senile gangrene was only transiently benefited, if at all.

Access to Rami Communicantes.—Leriche and Wertheimer confirm the feasibility and harmlessness of Gaza's incision, 3 cm. from the line of the spinous processes, extending from the seventh to the twelfth dorsal vertebrae. Guided by the posterior branches of the intercostal nerves, direct access to the rami is thus obtained, and severing them breaks the reflex arc of vasomotor and enteromotor neuroses in the viscera. For the stomach, the dorsal seventh, eighth and possibly ninth; for the liver and gallbladder, the dorsal ninth and tenth are the nerves involved. They mention Royle's recent report of the cure of rebellious constipation by sympathetic ramisection in the lumbar region. Ramisection seems promising also in treatment of dilatation of the esophagus from spasm of the cardia or diaphragm.

Lyon Médical

135: 449-478 (April 12) 1925

*Ramisection. R. Leriche.—p. 449.
Arteries Resisting the Pressure of the Sphygmomanometer. A. Dumas et al.—p. 452.

Section of Rami Communicantes.—Leriche obtained surprising results from severing the anterior communicating branches of the brachial plexus in a man with intense pains from a forearm stump. The pains disappeared completely and permanently the next day. The same operation succeeded in two other cases of otherwise uncontrollable painful affections.

135: 479-510 (April 19) 1925

*Syphilis Contracted by Infant During Birth. Bonnet.—p. 479.

Syphilis Transmitted from Mother to Infant During Delivery.—Bonnet concludes that this rare event may occur with childbirth the tenth or twelfth day after appearance of the primary chancre, when the organism of the mother, and consequently that of the baby is not yet syphilized or immunized. In the "passage case" described, the infant had two chancres on the vertex of the skull.

Marseille Médical

62: 533-580 (April 5) 1925

From Pneumothorax to Thoracoplasty. L. Billon.—p. 533.
*Huntington's Chorea in Brother and Sister. H. Roger et al.—p. 552.
Cerebral Abscess from Abscess of Lung. Boinet et al.—p. 559.
Nephrectomy for Old Tuberculosis. Chauvin and Emperaire.—p. 562.
Rupture of Silent Aortic Aneurysm. Boinet et al.—p. 568.

Heredity in Huntington's Chorea.—Investigation into two cases observed by Roger, Reboul-Lachaux and Antonin showed that the disease had occurred in three successive generations, and that defects of character appeared early in the descendants of the fourth generation who have not yet reached the age of the chorea. Physical and mental impairment as well as signs of degeneracy are apparent in the children of the fifth generation. The disease appeared at the same age (from 53 to 55) in six members of this family, and was accompanied in one of them with an actual (not simulated) suicidal reaction.

Presse Médicale, Paris

33: 657-672 (May 20) 1925

*Substances Acting on Vegetative Nervous System. Daniélopolu.—p. 657.
*Purpura Form of Meningococcemia. B. le Bourdellès.—p. 660.
Mineral Waters as a Form of Shock Treatment. A. Liacre.—p. 661.
A Medicosocial Service in a Factory. G. Poix.—p. 667.

Drugs Acting on the Vegetative Nervous System.—Daniélopolu emphasizes that in treatment with these drugs the action on the parasympathetic nerves as well as on the sympathetic should be considered, also the condition of the tonus of each. He reiterates further that diseased organs respond entirely differently from sound organs. His research proved that eserin first inhibits the motor functioning of the stomach for about two hours, and then exaggerates it. In cases with slightly impaired contracting power of the myocardium, digitalis improves conditions; in advanced myocardiac insufficiency, the effect from digitalis is the reverse. The irritability of the myocardium increases, the arrhythmia is intensified, and paroxysms of tachycardia may occur. Consequently it weakens the contractions, augments the excitability and the dilatation of the heart, inducing phenomena of weakening function—the reverse of the "normal" action of digitalis. Contrary to the current opinion, epinephrin, given by mouth, frequently increases the contractility of the stomach. This is explained by the fact that a large part of the drug is neutralized by the gastric juice, while the intact small remnant may exert an action on the parasympathetic. Small doses of atropin maintain exaggerated motor functioning of the stomach, since they act exclusively on the parasympathetic. Only a daily dose of 2 or 3 mg., with a first dose of 0.75 or 1 mg., inhibits the contractions of the stomach. This once secured, it can be maintained with smaller doses.

Infectious Meningococcus Purpura. — Examination of twenty-six cases of purpura revealed the presence of *Bacillus melitensis* in one instance, and of meningococci in all the others. In eight cases there were no meningeal manifestations. Good results were obtained with antimeningococcic serum.

33: 673-688 (May 23) 1925

French Surgery in the Eighteenth Century. P. Lecène.—p. 673.
*Dentigerous Cyst and Adamantinoma. A. and J. B. Morlet.—p. 677.
Anemia with Sickle-Shaped Blood Corpuscles. P. L. Marie.—p. 678.
Experimental Surgery in the United States. G. Loewy.—p. 683.

Dentigerous Cyst and Adamantinoma.—Morlet and Morlet describe a case of a tumor on the lower jaw which presented all the intermediate stages between a cyst and adamantinoma. The case, they say, confirms the common origin of the two affections.

33: 689-712 (May 27) 1925

Charcot Memorial Number.—pp. 689-712.

33: 713-728 (May 30) 1925

Physiology of Gallbladder. M. Chiray and I. Pavel.—p. 713.
*Albumminuria with Syphilis. C. Laurent.—p. 716.
Malaria Treatment in General Paralysis. P. Pagniez.—p. 717.
Prophylaxis of Leprosy in Indo-China. S. Abbattucci.—p. 723.

The Curable Albuminuria in Syphilis.—Laurent calls attention to a form of nephritis in syphilis, revealed only by albuminuria, while all other signs are absent. A slight uremia was noted in one among fifteen patients observed. The amount of albumin reached 1.2 and 1.5 per cent.; the duration of the albuminuria varied from two and a half months to seven years. In one case the affection disappeared under one series of arsenical treatment, but in most of the patients this occurred only with three to five series. No recurrences of albuminuria were observed for up to two years and more.

33: 729-744 (June 3) 1925

Gold Treatment in Tuberculosis. G. Poix.—p. 729.
Treatment of Vein Diseases. R. Hugel and G. Delater.—p. 731.
*Periarterial Sympathectomy. L. Desgouttes and A. Ricard.—p. 734.

Technic for Periarterial Sympathectomy.—Desgouttes and Ricard detail their method with which they assert the decortication of the artery is easy and complete. They decorticate the accompanying vein first.

Revue Française d'Endocrinologie, Paris

3: 89-144 (April) 1925

*Sympathetic System and Metabolism. A. Oswald.—p. 89.
*Ovarian Hormones. R. Courrier.—p. 94.
*Rôle of Suprarenal Cortex. R. Porak.—p. 102.
Asthma and Ovarian Disturbances. Claude and Saleur.—p. 115.
*Pituitary Extract and the Metabolism. *D. M. Rossiysky.—p. 124.*

Rôle of Nervous System in Metabolism.—Oswald emphasizes that the action of thyroid extract depends on the condition of the nervous, and especially of the sympathetic system. He thinks that the secretory products of endocrine glands stimulate the nervous system, which directs the metabolism. The activity of an endocrine gland itself is under the influence of the nervous system.

Action of Ovarian Hormones.—Courrier made his research with the follicular hormone of the ovary. Injection of the hormone in the newly born induced proliferation of the vaginal epithelium. The injection in a gravid guinea-pig induced the passage of the hormone through the placenta, proved by proliferation of the vaginal epithelium in the young. Two castrated guinea-pigs were injected with 1 c.c. of follicle fluid, one intravaginally, the other subcutaneously. The reaction of the vaginal epithelium was more pronounced in the first, tending, he says, to show the action of the hormone on the cells, without interference of the nervous system. Courrier adds that the ovary secretes besides the follicular hormone also a lutein hormone, playing an important rôle in pregnancy.

Significance of Cortical Substance of Suprarenal Gland.—A gradual destruction of the suprarenal glands in rabbits was followed by an exaggerated development of the accessory suprarenal glands, evidently supplementing the impaired function and thus allowing the survival of the animal. Since the accessory glands consist of cortical substance, Porak believes that the latter is vitally important in the functioning of the gland. Suprarenal insufficiency entails changes in the tonus of the vegetative system.

Action of the Pituitary on the *Metabolism.*—*Rossiysky* states that extract of the pituitary infundibulum provokes in animals a considerable gain of weight and an increased retention in the organism of nitrogen, chlorids, sulphur, phosphorus and especially of calcium, magnesium and sodium. The extract may be efficient in diseases with an augmented elimination of these elements.

Revue Médicale de la Suisse Romande, Geneva

45: 321-384 (May 25) 1925

*Muscular Rheumatism. *P. Demiéville.—p. 321.*
Termination of Attack in Paroxysmal Tachycardia. Bickel.—p. 348.
Echinococcosis in Switzerland. G. Dardel.—p. 352.
Suspected Mushroom Poisoning. M. Roch.—p. 359.
Tetanus of the New-Born Cured by Tetanus Antiserum. Vodoz.—p. 360.

Muscular Rheumatism.—Demiéville says that in the vast majority of cases a predilection for a few muscles in the trunk and the extremities is evident. In diagnosis, he tests the local sensitiveness by pressure and pinching; pain in a limited, fixed area is important. He has had good results in sciatica by the intramuscular introduction of hot physiologic solution containing 2 per cent. of sodium salicylate. This is also *recommended in treatment* of rheumatism of the large muscles of the trunk and particularly in the common, often stubborn, cases in the gluteus medius muscle, both in the acute and notably in the chronic form. Two or three injections, four at the most, at two day intervals, are *usually sufficient*; the dose is 5 to 7 c.c. of the solution to begin with, then 10 to 12 c.c. In certain extremely painful localizations in the gluteus medius he injects 4 to 7 c.c. at each end of the muscle.

Scalpel, Brussels

78: 501-532 (May 30) 1925

*Sudden Death from Puncture of Pleura. P. Fonteyne.—p. 501.
Late Puerperal Infection from Retention of Urine. Cantinieaux.—p. *507.*

***Sudden Death from Puncture of Pleura.**—Fonteyne reports* the case history of a boy, aged 12, with pleurisy of the left lung with profuse effusion and sudden collapse and death after the third puncture of the pleura. He discusses the possible embolism and reflex dangers in *intervention involving the pleura.* The fatality occurred before any fluid had been aspirated. He now makes a practice of injecting a local anesthetic to interrupt the reflex arc before puncturing.

Grèce Médicale, Athens

27: 5-12 (April) 1925

*Intracardiac Injection of Epinephrin. T. Astériadés.—p. 9.
Epidemic *of Water-Borne* Typhoid. G. S. Joannidès.—p. 10.
Luminal in Epilepsy. B. Conos.—p. 11.
*Access to Abscess in Liver. A. *Petridis.*—p. 13.

Intracardiac Injection in *Chloroform* Syncope.—In the first of Astériadés' *three* cases the injection was made at once when the syncope developed, at a herniotomy operation, and the young man recovered. In the two other cases, eight and ten minutes had elapsed, and the heart was *only transiently* revived.

Petridis' Mode of Access to Abscess in the Liver.—The polypleurodiaphragmatotomy described requires resection of three or four ribs, but the extensive access *more than justifies* this. The entire convex aspect of the liver and its posterior margin near the spine are thus open to ample inspection and treatment of the usually multiple tropical abscesses.

Archivio Italiano di Chirurgia, Bologna

11: 109-228 (March) 1925

*Transplants of Living Bone. L. Lazzarini.—p. 109.
*Pathogenesis of Jejunal Ulcer. S. Gussio.—p. 139.
Tuberculoma of Spinal Dura. A. Malerba.—p. 191.
*Treatment of Hydrocele. A. Vecchi.—p. 200.
Unreliability of Wildbolz Urine Test. Roello and Monaci.—p. 205.
Obstruction of Intestine from Pedunculated Cyst in Broad Ligament. G. Regoli.—p. 217.

Transplants of Living Bones.—Lazzarini gives the details of bone grafting experiments on twenty-nine rabbits. When the bone was taken from the same animal and transplanted at once, it healed in place and produced new bone when implanted in periosteum or bone tissue. The destructive phenomena prevailed at first over the reconstructive when the graft was from another animal of the same species, and the biologic processes were much more sluggish, but the ultimate outcome was practically the same.

Pathogenesis of Peptic Ulcer.—Gussio cut a wedge across the center of the stomach, and made a separate gastro-enterostomy in each of the resulting halves of the stomach in thirty-eight dogs. Signs of irritation and erosion were always far more pronounced in the gastro-enterostomy in the upper, cardial half than in that of the lower half of the stomach, but no difference was apparent in regard to the opening being nearer or farther away from the duodenum or whether the pylorus was permeable or not. The preponderantly acid secretion of the cardial portion was always the principal cause of the development of the jejunal ulcer. The acidity may be only relative, in comparison to the defensive forces, but the data presented apparently establish that it is the acidity and not the proteolytic power of the gastric juice which determines the ulcer in the first place.

Treatment of Hydrocele.—Vecchi incises the scrotum and vaginalis at the lowest point, for 4-5 cm., and after release of the fluid packs the entire cavity in the vaginalis with a strip of gauze. The packing is removed in two or three days, and in the thirty-two patients treated in this way there has never been any recurrence. The measure proved effectual also in four cases of spermatocele, bilateral in one.

Riforma Medica, Naples

41: 313-336 (April 6) 1925

Apparatus for Measuring Capillary Pressure. V. Ariola.—p. 314.
*Ultraviolet Rays for Venereal Adenitis. Tomasone.—p. 316.
Displacement of Pleura with Pneumothorax. E. Fiori.—p. 317.
The Reticulo-Endothelial System. G. Pianese.—p. 320.
Diagnosis of Fracture of the Skull. M. Loreti.—p. 321.

The Ultraviolet Rays in Treatment of Venereal Adenitis.—Tomasone reports encouraging results from exposure of enlarged inguinal glands to the quartz lamp. In six cases in which several glands were enlarged, to the size of a pigeon's egg or hen's egg, all painful and two suppurating, all retrogressed completely in from seven to ten days of daily exposures. In three other cases the healing did not begin until after the pus had been released; then it was complete in from four to seven days.

Prensa Médica Argentina, Buenos Aires

11: 1041-1068 (April 20) 1925

Comparative Study of Kidney Function Tests. Waldorp.—p. 1041.
The Campaign Against Venereal Disease. Carbonell.—p. 1053.
*The Hydrogen Ion Content of the Urine. A. H. Costemalle.—p. 1055.
*The Cholesterol Ratio in Tumors. A. H. Roffo.—p. 1060.

Hydrogen Ion Content of the Urine.—Costemalle regards the p_H of the urine as the only reliable index of the urine reaction. For the prognosis in acidosis, determination of the alkali reserve is more instructive.

Cholesterol Content of Cancer Tissue.—Roffo has found sometimes three times more cholesterol in tumor tissue than in the rest of the animal. Cholesterol takes up water readily, and the water content of the tumor increases proportionately.

Revista de Medicina y Cirugía, Caracas

8: 43-67 (Jan.) 1925

Case of Shoulder Presentation. L. E. Montilla.—p. 43.
Case of Parkinson's Disease. N. Rivera.—p. 46.
*Ringworm of Feline Origin. M. Vegas.—p. 49.
Treatment of Cancer. J. Iturbe.—p. 53.
*Pregnancy in Exophthalmic Goiter. Gutiérrez Alfaro.—p. 55.
Iodized Oil in Diagnosis of Pressure on Spinal Cord. Izquierdo.—p. 61.
A Visit to the Finsen Light Institute. R. Medina Jiménez.—p. 62.

Ringworm at Caracas.—Martín Vegas comments on the rarity of tinea at Caracas, probably from the small numbers of Russians and other races in whom ringworm is more common. He never encountered a case until recently, and the apparently identical microphyte was cultivated from both the child and the cat in the family.

Pregnancy in Exophthalmic Goiter.—The pregnancy developed apparently normally to the eighth month, when premature delivery occurred, without mishap except a tardy secondary hemorrhage. The fetus was apparently normal, but the gestation had an aggravating influence on the exophthalmic goiter. Severe arrhythmia developed and proved fatal the fourth day after delivery.

Revista Médica Latino-Americana, Buenos Aires

10: 641-778 (March) 1925

*Emergency Obstetric Hysterectomy. J. B. González.—p. 641.
*Endemic Pinta of Tropical America. A. Peña Chavarria and P. G. Shipley.—p. 648.
Treatment of Ankylosis of the Arm. E. M. Olivieri.—p. 722.
Implant Treatment of Pott's Disease. N. Tagliavacche.—p. 725.

Emergency Obstetric Laparotomy.—González impresses on the practitioner the advantages of the Porro technic in these conditions, drawing the stump of the uterus outside, fastening it to the abdominal wall.

Mal de los Pintos.—This illustrated monograph on this itching, pigmented and tenacious dermatomycosis of tropical America and certain points in Africa, was awarded a prize by the national Academia de Medicina of Colombia. Among its local names are *carato, pinta* and *karateflcck.* The best results in treatment have been obtained with arsenicals and mercurial ointment. Five kinds of fungi were cultivated from the lesions, responsible respectively for the white, violet, black, red or blue patches of pigmentation.

Semana Médica, Buenos Aires

1: 841-896 (April 16) 1925

*Nightmares, Somnambulism, Etc., in Children. J. M. Obarrio.—p. 841.
Giant Sigmoidoscope. R. Finochietto.—p. 853.
Training to Detect Substandard Children. T. A. Tonina.—p. 854.
Incomplete Form of Fatal Epidemic Meningitis in Three Infants. B. Soria.—p. 871.
Calcium-Parathyroid Treatment of Intestinal Tuberculosis. Curti.—p. 874.
Dental Foci of Infection. N. Etchepareborda.—p. 875.
Abdomen Traversed by Bullet. Spontaneous Recovery. M. Lapacó.—p. 882.
Capillaroscopy in Diabetes. A. Lacroze.—p. 883.
Present Conception of Angina Pectoris. F. Sanz Ruiz.—p. 885.
Radioactivity of the Cacheuta Mineral Waters. N. M. Sales.—p. 890.

Oneiric Disturbances in Children.—Obarrio has found the liver enlarged in nearly every child presenting pavor nocturnus or somnambulism, and he thinks that lumbar puncture might often reveal a meningeal reaction. When the digestion reaches the point of the passage of the food elements through the liver, and this organ is functionally incapable, there is a toxic action on the brain. The hemoclastic crisis was invariably positive in his cases. The pseudoconvulsions of oneiric delirium may deceptively suggest an epileptic seizure, except that on waking the child, the symptoms are at once arrested. In treatment, besides regulating the diet, he gives with two meals a glass of a solution of 10 gm. of sodium sulphate with 5 gm. of sodium phosphate and 5 gm. of sodium bicarbonate in a liter of water. All his patients were cured. In one case the disturbances were traced to the alcohol in a tonic prescribed by a physician.

Archiv für klinische Chirurgie, Berlin

135: 495-787 (April 30) 1925

*Gastric and Duodenal Ulcer. J. Petermann.—p. 495.
Duplication of the Upper Jaw. E. Bumm.—p. 506.
*Spastic Intestinal Occlusion. H. Reimer.—p. 520.
Operation for Abdominal Contusions. R. Demel.—p. 542.
Roentgenotherapy of Surgical Affections. W. Baensch.—p. 567.
Sarcoma of the Pancreas. H. Marxer.—p. 606.
*Healing of Gastro-Enterostomy Wound. A. Nemiloff.—p. 629.
*Late Deaths After Chloroform Anesthesia. Reichel.—p. 640.
*Resection of the Stomach. H. Finsterer.—p. 650.

Schömann's Extension Clamp. O. Frisch.—p. 668.
*Pathology and Therapy of Ileus. N. M. Sawkow.—p. 675.
Diverticula in Esophagus. Oehlecker.—p. 699.
Deformity of Patella After Fracture. H. Kästner.—p. 714.
Malignant Tumors of Differing Kinds at Intervals in Same Patient. W. Rieder.—p. 719.
Micrognathia. E. Seifert.—p. 726.
Pathology and Therapy of Erysipeloid. F. Arnholz.—p. 736.
*Infections in Relation to Goiter. A. Troell.—p. 751.
*Eye Symptoms with Goiter. A. Troell.—p. 755.
*Goiter and Vagotonia. V. Weiss.—p. 763.
Reconstruction of Lower Lip. Woloschinow.—p. 770.
Internal Incarceration of Intestine in Slit in Mesentery. I. M. Talmann. —p. 776.
Supernumerary Gallbladder. A. W. Wischnewsky.—p. 779.
Hemorrhagic Infarct in Wall of Gallbladder with Gallstones. Esau.—p. 782.

Surgical Treatment of Gastric and Duodenal Ulcer.—Petermann's report covers 443 cases, with a mortality of 5 per cent. after gastro-enterostomy, 7 per cent. after extensive resection. The majority of deaths occurred in his earliest period. On failure of internal therapy, he regards extensive resection as the best procedure. When this is contraindicated by age or general condition, and in inoperable ulcers, retrocolic gastro-enterostomy is the preferred method.

Spastic Intestinal Occlusion in Intraperitoneal Hemorrhage.—Reimer describes three cases after abdominal contusion, with toxic injury of the vegetative nervous system as the probable cause. Abnormal instability of the vegetative system was evident in all the cases. The general condition surprisingly little affected in spastic ileus, is the most important element in differential diagnosis in this disturbance. Conservative treatment may be employed in the mild cases; in the graver forms, early laparotomy, possibly with irrigation, is essential.

Healing in Gastro-Enterostomy Wound.—Nemiloff says that this is by second intention. Pronounced inflammatory and degenerative processes develop in the adjoining tissues and only in the deepest layers of the adjacent mucosa do living epithelial cells and parts of gland ducts persist, from which later the mucosa slowly regenerates. The other tissue layers of the wall, especially the musculature, partially degenerate at the junction, without regeneration, and scar tissue is formed. Silk sutures are mostly cast off in the stomach interior and materially disturb healing, hence the less they are used, the more favorable the conditions for healing.

Late Deaths After Chloroform Anesthesia.—Reichel says that in the 160 to 180 cases described in the literature, a characteristic symptom-complex followed the anesthesia, with death almost without exception in one and a half to five days. Necropsy always revealed acute yellow atrophy of the liver as the cause of death. The same picture and anatomic changes can be produced in animals by experimental chloroform intoxication. A predisposition is given by preceding affections, especially infections in the abdominal cavity, which in themselves favor fatty degeneration of the liver. The fatalities were most often observed after appendicitis operations, in acute cases. While the results are infrequent in proportion to the frequency of chloroform anesthesia, a number in a certain brief period suggests chloroform disintegration products or impure chloroform as the real cause of the intoxication.

Stomach Resection After Billroth I and Haberer's Modification.—Finsterer employs the original Billroth I only with very wide duodenum, otherwise Haberer's modification, which in addition to the safer suture, excludes primary stenosis with continued vomiting and secondary stenosis. In elderly and debilitated patients, because of the danger of suture insufficiency from defective adhesion, he prefers the modified Billroth II; likewise with ulcer invading the pancreas. In patients exposed to infection, he advises direct union of the stomach and duodenum, as this can prevent recurrence, without causing complete anacidity. Experience shows increased danger from typhoid in subacid or completely anacid states.

Pathology and Therapy of Ileus.—Sawkow never uses atropin injection, only the high enema. If this does not help, he performs a laparotomy. High enema alone was efficacious only in cases with fecal impaction and in some partial ileus cases. In clear cases of ileus, he advocates early operation. The prophylactic profuse infusion of saline during operation and the first hours afterward is, in his opinion, absolutely essential. For postoperative stimulation of the paralyzed intestine he injects strychnin subcutaneously. He states definitely that this measure has saved patients who for several days after detorsion had no fecal movement. Glycerin and particularly oil enemas may be helpful in intensive stimulation. The administration of heart stimulants he considers a matter of course.

Goiter.—In support of the view that exophthalmic goiter may be of infectious nature, Troell affirms that 25 per cent. of 165 cases of diffuse exophthalmic goiter developed directly after an acute infection, and that round-cell infiltration was present in 90 per cent. of all the cases. He suggests that the goiter may exert traction on the right cervical sympathetic and consequently paralyze it, causing the ocular symptoms. In two cases described, asymmetric eye symptoms were noted immediately after bilateral resection of the goiter.

Goiter and Vagotonia.—Weiss says that vagotonia was present in eight out of thirty-two goiter patients. In the four with degenerative goiter, marked vagotonia and sympathetic hypotonia were noted. The histologic findings in a later case operated for adenoma of the thyroid, revealed malignant degeneration (follicular adenocarcinoma) with the vagotonia.

Dermatologische Zeitschrift, Berlin

44: 1-78 (May) 1925

Action of Stovarsol in Experimental Syphilis. W. A. Collier and E Evers.—p. 1.
Treatment of Psoriasis. P. Weckesser.—p. 17.
Metastatic Gonococcus Arthritis After Trauma. M. Schubert.—p. 20.
Cancer Developing on Lupus Erythematodes. B. Dicke.—p. 24.

Deutsche Zeitschrift für Chirurgie, Leipzig

190: 137-418 (May) 1925

*Exclusion of Thoracic Aorta. M. Lebsche.—p. 137.
*The Pericardium and the Heart Action. W. Felix.—p. 178.
*Fate After Suture of Heart. E. Hesse.—p. 239.
*Treatment of Perforated Gastric Ulcer. W. F. Suermondt.—p. 290.
Origin of Diverticulum in Hernial Sac. Hilgenreiner.—p. 302.
Hernial Sac Plastic Inguinal Herniotomy. Lieschied.—p. 307.
*Operative Treatment of Ascarid Foci in Liver. Erb.—p. 316.
Course of the Sensory Nerves in the Vessels of the Extremities. V. Dumpert and K. Flick.—p. 329.
*Nail and Wire Extension for Fractures. H. Koch.—p. 333.
Pseudarthrosis in Neck of Femur. M. Richard.—p. 344.
Difficult Reduction of Dislocation of Hip. J. Fraenkel.—p. 359.
Hyperplasia of Lymphatic Tissue Simulating Polyposis in Large Intestine. H. Lehmann.—p. 391.
Mechanism of Isolated Dislocation of Semilunar Bone. Brandt.—p. 396.
Coxa Valga Luxans. B. Cohn.—p. 399.

Exclusion of the Aorta.—Lebsche's colored plates show the steps of the experiments on dogs to divert the blood stream directly into the descending aorta from the heart. A T tube in the descending aorta and a cannula passed into the left ventricle through the auricle were connected by a U tube. Several of the animals survived after the ascending aorta had thus been shut off from the circulation for six to eight minutes. In one experiment the heart continued to beat regularly with the blood thus diverted for forty minutes. Then the left lung, which had been pushed out of the way with gauze sponges, was released, and the heart action altered at once and gradually failed, with death the fifty-fourth minute after the circulation in the ascending aorta had been shut off. Even the seven minutes' exclusion of the ascending aorta allowed by this technic is not enough for a correct circular suture after resection. Hence some prosthesis substitute for the vessel is indispensable.

The Pericardium and the Heart Action.—Felix induced valvular and other lesions in dogs' hearts and then tried to influence them by modifying the pericardium. The function of the latter is predominantly mechanical. Making it smaller hampers the heart action, while enlarging it had a favorable influence on mitral and tricuspid valvular defects, but not on aortic or pulmonary defects as there is no compensatory dilatation with the latter as with the former.

Ultimate Outcome of Suture of the Heart.—Hesse compares his personal twelve cases of long supervision after suture of the heart with 107 on record. The interval since suture ranged from two months to eighteen years. The earning capacity is now unimpaired in 80.1 per cent., and only 1.7 per cent. are disabled. The ultimate outcome is excellent and the general condition good even in nine patients who had had purulent pericarditis. Disturbance in conduction after the suture may correct itself in time.

Treatment of Perforated Gastric Ulcer.—Suermondt turns in and sutures the perforation opening, and relates that of twenty-seven recently reexamined after such treatment all but five have been free from all stomach disturbances to date, up to fifteen years. The few that required operative measures later were in much better condition for it than at the time of the perforation.

Ascarid Abscess in the Liver.—The multipara recovered after the abscess had been cleared out. Besides the long ascarid, colon bacilli and pneumococci were found in the pus. The ascaridiasis dated from childhood, but there was no history of gallstones.

Nail and Wire Extension in Fractures.—Koch concludes from his experimental research that Klapp's wire method represents progress in the extension treatment of fractures. The small diameter of the wire tends to protect against infection, but the method is less adapted to spongiosa bone.

Monatsschrift für Geb. und Gynäkologie, Berlin

69: 139-276 (May) 1925

*Constitution of Eclampsia Patients. Bublitschenko.—p. 139.
*Depth of Respiration in Preeclamptic State. Klaften.—p. 164.
Syphilis and Pregnancy. D. A. Matusovszky.—p. 173.
*Influence of Forceps on Infant Mortality. G. Rittershaus.—p. 182.
Invagination of the Ovum. L. Weill.—p. 190.
*Actinomycotic Parametritis. P. Schugt.—p. 192.
*Tumor Material in the Tube from Uterine Cavity. E. Vogt.—p. 202.
*Etiology and Prophylaxis of Eclampsia. A. Hochenbichler.—p. 206.
*Tuft of Hair on Female Adam's Apple. J. S. Galant.—p. 219.
History of Gynecology. A. Martin.—p. 224.

Constitutional Peculiarities in Eclampsia Patients.—Bublitschenko's investigations in 226 eclampsia patients and 252 healthy women indicate that a relatively late beginning of menstruation and a disposition to atypical menstruation are characteristically common in eclampsia.

Increased Depth of Respiration in Preeclamptic State.—Klaften states that the amplitude of the breath exceeds that in normal conditions. Noticeable increase in amplitude within a few days or hours, as well as average absolute increase, afford a sure sign of increasing intoxication and a tendency to eclamptic spasms.

Influence of Forceps on Infant Mortality. — Rittershaus found that 8.32 per cent. of 17,942 deliveries were forceps deliveries, with a total infant mortality of 3.78 per cent. He confirms Winkel's indication for the infant (heart sounds below 100 in a single pause between pains) and considers extension of the second stage of labor beyond three hours, the necessary conditions being present, as a relative indication for typical forceps application in the interest of both mother and child. The work issues from the Freiburg women's clinic.

Actinomycotic Parametritis.—Schugt describes a localization of actinomycosis in the right epigastrium in a woman, aged 29. Necropsy confirmed that roentgen irradiations may exert a favorable action on actinomycotic affections within the body. The parametrium had been involved, but had healed under the roentgen rays.

Passage of Tumor Material from Uterine Cavity to the Tubes. — Vogt describes Sampson's theory and cites three cases in proof.

Etiology and Prophylaxis of Eclampsia.—Hochenbichler found similar results after irradiation with the quartz lamp and after bloodletting. It would therefore seem advisable to substitute the former for the latter, and for increased effect, in especially grave cases, to apply both.

Tuft of Hair on Female Adam's Apple.—Galant regards this case as a rare anomaly and at least as important a stigma of degeneration (virilism) in woman as a masculine border line of the hair on the pubis.

Monatsschrift für Kinderheilkunde, Leipzig

30: 97-192 (May) 1925

*Modification of Child Chest by Gymnastics. H. Götz.—p. 97.
*Suppuration in Urogenital Apparatus in Infants. Schönfeld.—p. 112.
*Familial Mongolism. Chotzen.—p. 120.
*Bone Changes in Intestinal Infantilism. F. Lehmann.—p. 124.
*Sinus Thrombosis in Influenza. A. Hottinger.—p. 131.
Changes in Growth of Moscow Children. W. Stefko.—p. 149.

Shape of the Thorax in Children.—Götz lauds the advantages of the Hofbauer method of measuring the chest by the "reduced sagittal diameter" for comparing different children and the same child at different times. She gives the diagrams of a number of children, showing that a flat chest with slanting superior aperture often displays excellent function, even better than the high "infant" shape. The children with pulmonary tuberculosis generally have a well rounded chest. Systematic gymnastic exercises do not alter the position of the chest, although they soon improve the function.

Suppurating Urinary Infections in Infants. — Schönfeld describes cases which testify to a surprising lack of involvement of the upper urinary passages in cystitis, as also cases of unmistakable primary affections of the kidney with descending infection. Colon bacilli often could be cultivated from the blood before they were found in the urine. He is unable to explain how the urine can be permanently sterile with severe pyuria, as he has sometimes observed. In one case hematuria was the first symptom; it then subsided and pyuria developed and persisted for a long time without impairment of the general health or fever.

Familial Mongolian Idiocy.—The third child of two sisters presented mongolism. There was no history of syphilis or alcoholism, but endocrine and psychic disturbances were common in both families.

Bone Changes with Intestinal Infantilism.—The three children with the Heubner-Herter picture of intestinal infantilism developed rickets late, long preceded by osteoporosis. The tendency to rickets had probably existed from the first, but had been masked by the undernourishment and arrest of the growth from the metabolic derangement.

Sinus Thrombosis as Complication of Influenza.—Hottinger states that the epidemic of influenza at the Basel children's clinic in 1924 had a mortality of 11.2 per cent., almost the same as the great 1918 epidemic, and complications were numerous and grave. Thrombosis of the longitudinal sinus developed in four of the infants, aged about 2. It was of otogenous origin in two of the children.

Münchener medizinische Wochenschrift, Munich

72: 753-792 (May 8) 1925

*Surgery of Angina Pectoris. A. Schittenhelm and M. Kappis.—p. 753.
*Anthracochalicotic Lymph Nodes and Bronchitis Deformans. Schmorl.—p. 757.
*Treatment of Bronchitis with Ether. E. Riess.—p. 758.
*Deficiency of Sulphur. Grumme.—p. 761.
*Serodiagnosis of Otosclerosis. H. Leicher.—p. 762.
Blood Findings in Induced Malaria. W. Skalweit.—p. 762.
Differential Stains for Diphtheria Bacilli. Sonnenschein.—p. 765.
Vaccine Treatment of Gonorrhea in the Female. E. Schwab.—p. 767.
*Gonococcus Arthritis in Infant. K. Wahlberg.—p. 770.
*Habitual Oblique Position of Shoulder. O. Muck.—p. 771.
*Parasympathetic Diabetes in Man. F. Bertram.—p. 772.
*Homeopathy. A. Bier.—p. 773. Conc'n.
Colloid Metals. O. Lange.—p. 776.
Etiology and Treatment of Lockjaw. T. Port.—p. 777.
*Proposed Legislation Against Alcohol. F. Riss.—p. 778.

Surgery of Angina Pectoris. — Schittenhelm and Kappis review the results of five different surgical procedures in angina pectoris. All of them seem capable of abolishing the pains. After failure of all internal measures either the extirpation of the superior cervical ganglion or resection of the depressor nerve is indicated. Paravertebral injections might be tried first.

Anthracochalicotic Lymph Nodes and Bronchitis Deformans.—Schmorl draws attention to the changes in the bronchi due to contraction of anthracotic or chalicotic lymph nodes. Formation of diverticula and other anomalies develop, which may represent precancer changes.

Treatment of Bronchitis with Intramuscular Injections of Ether.—Riess made intramuscular injections of 0.5 c.c. of ether in 0.5 c.c. of olive oil, with addition of a local anesthetic, in 187 cases of postoperative bronchitis, including that following inhalation of ether. The results were excellent. He recommends one such injection daily in every case of acute or chronic bronchitis without emphysema.

Deficiency of Sulphur.—Grumme believes that an insufficient intake of sulphur predisposes to cancer.

Serodiagnosis of Otosclerosis.—Leicher found similar serologic changes in both his otosclerosis and cancer patients. The points investigated were: lowered blood calcium and cholesterol; low sugar tolerance; phlorhizin glycosuria; relative increase in globulins; Kahn's reaction, and the antitryptic titer of the serum.

Gonococcus Arthritis in Infant.—Wahlberg observed two cases of gonococcus arthritis in nurslings who had a gonorrheal affection of the nose.

Habitual Oblique Position of Shoulder from Obstruction of Blood Outlet from Brain.—Muck's patient after a ligation of the right jugular vein developed a habit of lifting the right shoulder high. The face became cyanotic when the arm was forcibly drawn backward and down. He observed another similar case, and investigated the faulty posture among school children.

Parasympathetic Diabetes in Man.—Bertram reports the history of a man whose attacks of bronchial asthma subsided for ten months after bilateral sympathectomy; then they returned as severe as before. Three months after the second operation the patient vomited all the food and presented glycosuria. The alimentary hyperglycemia was pronounced. Injection of atropin lowered the curve a little. The author believes that the disturbance of sugar metabolism was due to the predominance of the parasympathetic. The vomiting seemed to be of hysterical nature.

Homeopathy.—Bier believes that some of the homeopathic remedies are efficient. He had good results in thirty-four cases of furunculosis with doses of 1/10,000 mg. of sulphur iodid, taken half an hour before meals three times every day. The patients recovered within a month. He had fair results in acute furunculosis with three doses of 0.1 mg. daily. He can prevent attacks of coryza in himself by taking a little water in which tincture of iodin or Lugol's solution has been dissolved (1 drop in a glass of water). Heat has a good influence on fresh burns. Injections of ether help in bronchitis. He emphasizes that he does not intend to discard the usual "allopathic" remedies, and even states his belief in the future success of chemotherapy of sepsis. He believes, however, that an agreement with sensible homeopaths may be obtained which will free them from the quacks that are following them. Hahnemann, with all his one-sided shortcomings, was an important personality. His acceptance of vaccination is to his credit. But after all, he says, the most important discovery in the history of medicine was that of Hippocrates in the aphorism, "Nature cures the disease."

Proposed Legislation Against Alcohol.—The pending new German penal code provides for prison sentences up to two years for persons who commit crimes while completely drunk. Saloonkeepers who serve drinks to young or drunken persons or to those who have been enjoined from visiting saloons (for a period of three to twelve months), are also punishable. The court has the power to force a criminal drunkard to submit to a course of treatment.

Zeitschrift für Tuberkulose, Leipzig

42: 257-352 (May) 1925

Routes of Infection in Tuberculosis. H. Beitzke.—p. 257.
Prognosis of the Lung Cavity. H. Grau.—p. 265.
Deep Roentgenotherapy in Pulmonary Tuberculosis. Schulte-Tigges.—p. 267.
Laryngeal Tuberculosis Treated by Natural and Artificial Sunlight. F. Kellner.—p. 271.
*Immunization Against Tuberculosis. Arima et al.—p. 275.
Diagnosis of Pneumoconiosis. V. Hinze.—p. 292.
Effect of Tuberculin Injections on Enuresis. P. Müller.—p. 294.
Reply. F. v. Kováts.—p. 297.
Recent Research on Treatment and Diet in Tuberculosis. Schröder.—p. 299.

Immunization of Guinea-Pigs Against Tuberculosis.—Arima, Aoyama and Ohnawa say that to induce artificial immunity to tuberculosis without causing infection or generalized tuberculosis, the bacilli must not be changed immunologically. Their saponin and lipase method preserves the immunizing value of the bacilli. They describe in part their experiments on guinea-pigs; in all, 3,000 guinea-pigs were used. The animals treated with their tubercle bacilli preparation were all immune to later infection, the immunity differing only in degree. They add that artificial immunity to tuberculosis was also induced in rabbits by this method. [Their earlier report on the nonvirulence of saponin cultures of human tubercle bacilli was summarized in The Journal, Feb. 7, 1925, p. 479.]

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 2205-2308 (May 16) 1925

*Diabetes in Infants. J. C. Schippers.—p. 2206.
*Stimuli for the Cells. H. Verploegh.—p. 2216.
Roentgen-Ray Treatment of Laryngeal Tuberculosis. C. J. A. van Iterson and D. J. Steenhuis.—p. 2224.
The Myodiopter. II. G. J. Schoute.—p. 2230.
*Scarlet Fever Toxin and Antitoxin. H. Aldershoff.—p. 2237.
*Haematomyelia Tubularis. G. C. Bolten.—p. 2241.

Diabetes in an Infant.—The sudden onset with fever and signs of acute nephritis in a previously healthy infant of 4 months suggest that the acute infection had injured the islands of Langerhans. The resulting diabetes was kept under control with insulin, the doses modified to fit the waves of tolerance and intolerance. With a weight of 4,520 gm. the polarimeter showed 9.1 per cent. glucose in the urine. Schippers began tentatively with 5 units of insulin, and he did not succeed in banishing the sugar from the urine completely. By the age of 19 months the child had four teeth and presented the aspect of health. The aim in feeding was to approximate 1.5 gm. protein; 3.75 gm. fat, and 6 gm. carbohydrates per kilogram—about 64 calories per kilogram. The details are given and the thriving of the child is emphasized. At the age of 2 years and one month, an intercurrent pharyngitis and pneumonia aggravated the condition and the child died in coma.

Specific and Nonspecific Stimuli for the Cells.—Verploegh insists that tuberculin and similar substances should be used only when the defensive forces are active. Our aim should be to stimulate the sound cells to extra work while stimulating only weakly the cells of the disease foci (extracts of connective tissue, muscle, bone and gland extracts, blood, extracts of cultures of the cocci that accompany the tubercle bacilli, hormones, etc.). His research seems to suggest that the phase of the splitting determines the character of the stimulus induced. It acts more strongly on the sound cells than on the focus when it is in that phase in which the protein molecule loses its "protein" property. This phase is revealed by the biuret reaction. He declares that we must transform our vaccine treatment of the anemic and weakly to take advantage of the abiuret phase. The strongest and most specific stimulus is afforded by the own blood. Addition of tissue extract and a vaccine to tuberculin enhances its effect materially in patients with good resisting powers. With weak resisting powers, the patient is unable to split the protein molecule into a harmless product. The only way we can help him is by giving the protein molecules in the abiuret form. In any event, the least we can do is to refrain from treating such patients with cell stimuli which introduce into the blood an unsplittable protein molecule.

Scarlet Fever Toxin and Antitoxin.—Aldershoff states that he is now ready to supply antitoxin for therapeutic use. He obtains it from horses treated with the Dick toxin and with toxin of local origin. The horse serum not only gives a good blanching reaction but reduced the temperature promptly in two children with scarlet fever, injected subcutaneously with 40 or 22 c.c.

Symmetrical Hemorrhage on Both Sides of the Spinal Cord.—The young man hit his head and chest against a tree in jumping from a moving street car. There was no unconsciousness, but flaccid paralysis developed at once, indicating "haematomyelia tubularis." Considerable improvement has been observed in the course of several months, but the patient has had cystitis, and his position has to be changed regularly to ward off decubitus.

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RADIUM TREATMENT OF CARCINOMA OF THE CERVIX UTERI

RESULTS AT THE WOMAN'S HOSPITAL AFTER FIVE YEARS *

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In the six years that we have treated cancer of the cervix with radium in the Woman's Hospital, we have based our treatment on the reaction of the neoplasm to the initial, or, as we prefer to call it, the therapeutic, dose as seen from six to eight weeks after the first radium treatment has been given. In a recent paper by one of us,[1] the technic of administering the radium and the clinical reaction as seen in the cervix for from six to eight weeks following the application is fully described. In brief, the initial dose given is from 2,400 to 3,600 milligram hours. The radium salt is in tubes, and radium needles are used when the paracervical tissues are involved. Until recently, needles were not used unless the case was a definite Class 3 or 4. We have lately employed needles more frequently in the cervicovaginal margins whether they are palpably involved or not. The subsequent dose or repeated doses depend on the retrogression of the tumor, and any evidence of reactivity in the cancer cells at a later period. We believe from our experience that these patients do better after irradiation if their resistance has been fortified by preliminary attention to their general health as far as the circumstances will allow. The associated anemia, which is frequent, can be markedly improved by a prophylactic blood transfusion in many cases, and it is our custom, whenever possible and necessary, to utilize this valuable aid. Five hundred cubic centimeters of blood administered a few days prior to the treatment will aid the patient to combat more successfully the toxins thrown into the system as a result of the local destruction of tissue by irradiation. The patients report once each month to the follow-up clinic, which we attend in person, and if in six or eight weeks after the first treatment the cervix does not show the contraction and pallor due to the development of scar tissue and occlusion of blood vessels resulting from sufficient dosage, a second treatment is advised, usually a repetition of the initial dose. Subsequent treatments depend on evidence of cell activity, and some of our most striking results have followed several irradiations.

It is important to point out that many of the subsequent treatments may only consist of implantation of needles in small suspicious areas that have developed since the previous inspection. We wish to emphasize the point that we believe better results may be obtained if this monthly inspection is carried out as a routine by the surgeons themselves, and that vigilance will enable one to note *early* any sign of an exacerbation of the disease in the vaginal tract. The prompt application of the radium to such a suspicious area will stamp out the rekindling fire before it has gained a dangerous headway. We believe that we have prolonged the lives of some of our patients by this watchfulness—here eternal vigilance is surely the price of safety.

We do not believe that there can be a uniform dosage if we are to obtain the best results from radium. Every case of cancer is a study by itself, and we think that we have seen a considerable variation in the response to the initial dose in cases with the same type of cell and the same stage of the disease. As one of us[2] has pointed out in discussion elsewhere, it is not always possible to give a definite classification of the type of cell in every case, as frequently the types are mixed in various proportions and often in different sections of the same cervix. The tissue removed for examination may be of one type, while in another and perhaps preponderating area another type may be present.

The dosage sufficient to cause a complete disappearance in one case with no recurrence after five or six years may not be sufficient to retard or cause retrogression in another case of exactly similar pathologic findings and extent of the disease. We cannot see the advantage of giving several treatments at short intervals as done in some clinics, before a sufficient time has elapsed to judge of the effect of the first application to the tissues, as there is a great difference in the response of the growth to radium treatment; nor can we believe in the massive doses that destroy the normal cells and pave the way for a rapid extension of the malignant tumor. Rather are we in accord with the belief of Dr. James Ewing, as quoted in the preliminary report of our work, that one can extricate and emphasize one principle of radiation therapy; viz., that irradiation is capable of restraining the growth of tumor cells without causing either autolysis or necrosis, and radium action is exerted on proliferating connective tissue. For the first time in the history of medicine we are in possession of an agent that will control the growth of connective tissue. From the study of much material, from operation and necropsy, in cases treated by deep irradiation, Dr. Ewing[3] says, he has become convinced that the clinical results are not usually due to the direct killing effect of irradiation but are generally brought about indirectly and mainly by interference with the circulation—capillary, venous, arterial and lymphatic. In many cases the main part of the destruction has been caused by occlusion of blood vessels.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Farrar, Lilian K. P.: Preliminary Report of Results of Radium Treatment in Carcinoma of the Cervix, read before the Medical Society of the State of New York, Syracuse, May 13, 1925.

[2] Ward, G. G., in discussion on uterine cancer, Tr. Sect. Obst., Gynec & Abd. Surg., A. M. A., 1924, p. 244.

[3] Ewing, James: The Mutter Lecture, Radium report of the Memorial Hospital, 1924.

The value of our method of treatment is what we are now trying to ascertain after having pursued this course for six years. In the first years, operation and radium were used in combined treatment of twelve cases, and in the last six months we have employed the roentgen ray together with radium; but these cases are too recent to be included in this report. Our report, then, will endeavor to summarize our results of all cases treated by radium alone at the end of three years and of five years; those treated by combined radium and operation, and a total summary of this combined group with the pure radium series. The compiling of the statistics from our end-result cards, the radium record books, and the case histories has been done by Dr. Ralph L. Barrett of the staff. As Dr. Barrett was not connected with the clinic during the period covered by this report, his deductions are entirely impartial and have been unbiased by any personal equation.

Table 1.—*Age Incidence*

Decades	Number	Per Cent.
20-30	8	4.0
30-40	45	22.9
40-50	67	34.1
50-60	48	24.4
60-70	20	10.2
70-80	8	4.0
Total	196	99.6+

Youngest, 26; oldest, 77.

Results of Treatment of Eight Patients Under 30 Years of Age; or 4 Per Cent.

Case	Year	Class	Treatment	Lived
1	1919	3	Radium alone	2 yr.
2	1919	2	Radium alone	1 yr.
3	1919	2	Radium alone	1 yr.
4	1919	3	Radium alone	1 yr.
5	1920	2	Radium alone	5 yr. (living)
6	1921	3	Radium alone	4 yr. (living)
7	1921	3	Radium alone	1 yr.
8	1923	3	Radium alone	1 yr.

It would seem desirable that some uniform method of reporting these statistics from the various clinics be adopted, if the full value of comparative studies is to be readily available. In studying the reports issued from time to time from the various clinics, this absence of uniformity is most striking and greatly complicates the problem.

We have used Schmitz'[4] classification for all our cases that we might more clearly define the stages of involvement, but we have substituted the word "secondary" for "recurrent" in the classification, believing that it will lead to less confusion of terms if the word "recurrent" is used only when it is intended to mean a renewed activity of the malignant cells whether after operation or radium treatment.

This report is based on the ward cases that have from the beginning of our radium treatment been assigned to the first division of the hospital, which is under our direct supervision and care, and also on our private cases. The private patients treated by other members of the staff have not been included on account of the variation of dosage and management.

We have based our percentages on the number of patients "living" after three and five year periods from the first treatment we have given. The total number of patients that we treated is 196, and of these all but eight have reported to the follow-up clinic or have been definitely traced and their condition known. We have deducted the missing eight rather than call them dead, believing this to be more nearly accurate, as recently six patients who had not been in the clinic in from one and one half to four years returned as the result of a vigorous follow-up, each one in excellent health and clinically free from carcinoma. The total number of cases traced, then, is 188; 181 were treated with radium alone, twelve were treated by combined radium and operation, and three were secondary cases (recurrence after panhysterectomy for carcinoma of the cervix). Forty-two cases of the 196 are of but two years' duration or less, and will therefore not be included in this report. There are, then, 154 cases to be reported: *primary* cases treated with radium alone, 139; primary cases treated with radium and operation, twelve; secondary cases treated with radium, three.

DEFINITION OF CLASSIFICATIONS

We have adopted Schmitz' classification:

1. *Primary Cases.*—Cases receiving initial treatment from us:

(*a*) Operable: Classes 1 and 2, limited to the cervix with no induration of paracervical tissue.

(*b*) Inoperable: Classes 3 and 4, any extension beyond cervix or induration of paracervical tissues.

2. *Secondary Cases.*—Cases recurring after panhysterectomy for cancer of the cervix.

It is of interest to note that in the series of 196 cases treated we found that carcinoma developed in the cervical stump left after a previous supravaginal hysterectomy in nine cases.

Mortality.—There were three deaths among the 181 patients treated by radium alone, or a mortality of 1.6 per cent.

Table 2.—*Incidence of Fistula Following Radium or Terminal Stage*

(*a*) Primary

Year	Class 1 No.	Class 2 No.	Class 3 No.	Class 4 No.	Healed, No.
1919	..	1	3 (2)*	..	..
1920	..	..	1	..	1
1921	..	1	..	..	..
1922	..	..	1	..	..
Total	..	2	5 (2)	..	1

(*b*) Secondary

Year	Class 1 No.	Class 2 No.	Class 3 No.	Class 4 No.	Healed No.
1919	..	..	..	..	..
1920	..	..	..	1	..
1921	..	..	..	1 (2)*	1
1922	..	..	..	..	..
Total	..	..	..	2 (2)	1

Total, 196 cases; 11 fistulas in 9 cases; 2 healed, 5 per cent.
* Two fistulas in one case.

Operability.—Five patients were refused radium treatment on account of evidence of distinct metastasis and marked cachexia. These, with the 196, make 201 cases. Of these, forty-eight were Classes 1 and 2, giving an operability of 23.8 per cent.

Table 1 shows the age incidence by decades. The youngest patient was 26, the oldest, 77. There were eight patients under 30 years of age, or 4 per cent. Five of these patients died in one year, one in two years, and two are living, one after four years and one after five years

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[4] Schmitz, Henry: End-Results of the Treatment of Cervical Carcinoma with Radium and Roentgen Rays, J. A. M. A. 84: 81 (Jan. 10) 1925; Treatment of Inoperable Cervical Carcinoma with X-Rays and Radium, Am. J. Obst. & Gynec. 9: 644, 1925.

Table 2 shows the incidence of fistula. Nine patients had thirteen rectovaginal or vesicovaginal fistulas at some time following radium treatment. Two of these fistulas have healed, leaving eleven permanent fistulas, either as the immediate result of radium or from the extension of the carcinomatous growth, an incidence of 5 per cent.

Table 3 shows the three year end-results in cases of primary carcinoma of the cervix treated (*a*) with radium alone, (*b*) by radium and operation, and (*c*) secondary carcinoma treated with radium. The cases are arranged in classes from 1 to 4 according to Schmitz' classification. The number traced is given, the number living and the percentage for each year, then the total percentage of each, and finally the combined total percentage for all classes by radium or radium and operation. We will speak later of the operable cases, but now take up all classes together In (*a*) the series of cases of primary carcinoma treated with radium alone, there were fifty-eight patients of all four classes living three years or longer, or 43.6 per cent. In (*b*) the primary carcinoma treated with radium and operation, there were twelve These cases were largely confined to our earlier series, when a Wertheim or panhysterectomy was done after irradiation, but as our experience increased, it seemed to us that the method of treatment was open to doubt in view of the satisfactory results obtained with radium alone, although, in this series of eleven patients, 72.7 per cent. were living three years or longer. In (*c*) the secondary cases treated with radium, we had no patient living three years; so the combined total percentage for primary and secondary carcinoma of the cervix or all classes treated with radium, or radium and operation living three years or longer, is 44.8 per cent

Table 3—*Three Year End Results, Carcinoma of the Cervix*

	Class 1			Class 2			Class 3			Class 4			Total		
Years	Traced	Living	Per Cent	Traced	Living	Per Cent	Traced	Living	Per Cent	Traced	Living	Per Cent	Traced	Living	Per Cent
(*a*) Primary Carcinoma, Radium															
1919	0	0	0	10	4	40	30	7	23.3	1	0	0	41	11	26.8
1920	0	0	0	7	7	100	24	10	41.6	0	0	0	31	17	54.8
1921	0	0	0	8	6	75	21	7	33.3	0	0	0	29	13	44.8
1922	1	1	100	5	5	100	26	11	42.3	0	0	0	32	17	53.1
													133	58	43.6
(*b*) Primary Carcinoma, Radium and Operation															
1919	1	1	100	5	3	60	1	1	100.0	0	0	0	7	5	71.4
1920	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0.0
1921	1	1	100	2	1	50	0	0	0.0	0	0	0	3	2	66.6
1922	0	0	0	1	1	100	0	0	0.0	0	0	0	1	1	100.0
													11	8	72.7
(*c*) Secondary Carcinoma, Radium (Following Panhysterectomy)															
1919	0	0	0	0	0	0	1	0	0.0	0	0	0	1	0	0.0
1920	0	0	0	0	0	0	1	0	0.0	0	0	0	1	0	0.0
1921	0	0	0	0	0	0	1	0	0.0	0	0	0	1	0	0.0
1922	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0.0
Total ..													147	66	
Combined total percentages															44.8

Table 4 shows the five year end-results of cases arranged in the same way as the previous table, except that there are only two series of 5 year groups In (*a*) the series of cases of primary carcinoma of the cervix treated with radium alone, there were seventeen patients of all four classes living five years or longer, or 23.6 per cent. In (*b*) the cases of primary carcinoma treated by radium and operation, there were four patients living five years or longer, or 57.1 per cent. No patient with secondary carcinoma lived five years. The combined total percentage for patients with primary and secondary carcinoma of the cervix of all classes treated with radium or operation and radium living five years or longer is 25.9.

Table 5 shows the number of patients receiving more than one radium treatment. We believe that frequent inspection of the cervix and immediate application of radium to any suspicious area has checked recurrence of the malignant growth in many of our cases. Of the 139 patients with primary carcinoma of the cervix receiving radium treatment, sixty-four, or 46 per cent., have received more than one application. Of the fifty-eight patients living three years or longer, twenty-six, or 44.8 per cent., received more than one irradiation, and of the seventeen patients living five years or longer, eight, or 47 per cent., had more than one irradiation.

Table 4—*Five Year End-Results; Carcinoma of the Cervix*

	Class 1			Class 2			Class 3			Class 4			Total			
Years	Traced	Living	Per Cent	Traced	Living	Per Cent	Traced	Living	Per Cent	Traced	Living	Per Cent	Traced	Living	Per Cent	Combined Total
(*a*) Primary Carcinoma; Radium																
1919	0	0	0	10	3	30.0	30	5	16.6	1	0	0	41	8	19.5	
1920	0	0	0	7	6	85.7	24	3	12.5	0	0	0	31	9	29.0	
													72	17		23.6
(*b*) Primary Carcinoma; Radium and Operation																
1919	1	1	100	5	2	40.0	1	1	100.0	0	0	0	7	4	57.1	
1920	0	0	0	0	0	0.0	0	0	0.0	0	0	0	0	0	0.0	
													7	4		57.1
(*c*) Secondary Carcinoma; Radium (Following Panhysterectomy)																
1919	0	0	0	0	0	0.0	1	0	0.0	0	0	0	1	0	0.0	
1920					..	.	1	0	0.0	0	0	0	1	0	0.0	0.0
Total													81	21		
Combined total percentages																25.9

Table 5—*Primary Carcinoma of Cervix Treated by Radium Alone, Patients Receiving More Than One Radium Treatment*

Year	Class 1	Class 2	Class 3	Class 4	Living 3 Yrs	Living 5 Yrs
1919	0	3	16	0	5	4
1920	0	4	12	0	8	4
1921	0	1	13	0	4	—
1922	1	1	13	0	9	—
Total	1	9	54	0	26	8

Summary

Total number of all classes of carcinoma of cervix treated with radium alone	139	
Sixty four of these patients received repeated radium treatments at varying intervals, or		46%
Total number of all classes of carcinoma of cervix treated with radium alone living three years or longer	58	
Twenty six of these patients received repeated radium treatments at varying intervals, or		44.8%
Total number of all classes of carcinoma of cervix treated with radium alone living five years or longer	17	
Eight of these patients received repeated radium treatments at varying intervals, or		47%

Table 6 shows the three year end-result of radium alone in operable cases (Classes 1 and 2). It is acknowledged, we think, that for the inoperable cases of cancer of the cervix, radium is preferable to surgery; but for the operable cases there seems still to be a great difference of opinion. The comparison of radium with surgery should be, however, in the operable cases alone. The question is, Should radium replace surgery in the operable case? The 20 to 25 per cent. absolute curability by the radical Wertheim operation comes only after years of surgical experience and a high primary mortality in the early years while getting this experience, but the low mortality from radium treatment, and also the low morbidity, is in favor of radium only if we can get equal results with surgery. It is not the ease with which radium may be applied that we should consider, but what is the final result to the patient.

Table 6 shows the cases of operable carcinoma by years. Of the patients treated in the first year, only 40 per cent. were living three years later; but in two years of the series, 100 per cent. were living three years or longer, and the total percentage of the four series showed that twenty-three, or 74.1 per cent., of the patients were living three years or longer.

Table 7 shows the five year end-results of operable cases of carcinoma of the cervix treated with radium alone. Five years has been the time considered the test for absolute curability by the radical operation. In comparison of methods of treatment, surgery or radium, the same time limit should apply. We have eighteen cases of primary carcinoma of the cervix treated with radium; seventeen have been traced. We may say that every effort has been made to locate the eighteenth patient by search in the records of death certificates by the board of health, but she is not there, so we have omitted this case, reporting those we have traced and know to be living five years or longer. In the first series (1919), three are living, or 30 per cent. In the second series (1920), six are living, or 85.7 per cent. The total number of patients with primary carcinoma of the cervix treated with radium alone living five years or longer is nine, or 52.9 per cent. If we count as dead the eighteenth patient, the percentage of living patients after five years is 50.

Table 6.—*Results in One Hundred and Thirty-Nine Cases of Primary Carcinoma of the Cervix Treated with Radium Alone Observed Three Years or Longer*

Year	Classes 1 and 2	Traced	Living	Per Cent.	Classes 3 and 4	Traced	Living	Per Cent.	Total per Cent.
1919	11	10	4	40	32	31	7	22.5	26.8
1920	7	7	7	100	26	24	10	41.6	54.8
1921	9	8	6	75	21	21	7	33.3	44.8
1922	7	6	6	100	26	26	11	42.3	53.1
Total	34	31	23			Operability, 24.4 per cent.			

Number of cases treated with radium alone...............	139
Number of operable cases treated with radium alone......	34
Number traced	31
Number of these patients living three years on longer....	23, or 74.1%

Table 7.—*Results of Seventy-Six Cases of Primary Carcinoma of the Cervix Treated with Radium Alone Observed Five Years or Longer*

Year	Classes 1 and 2	Traced	Living	Per Cent.	Classes 3 and 4	Traced	Living	Per Cent.	Total per Cent.
1919	11	10	3	30	32	31	5	16.1	19.5
1920	7	7	6	85.7	26	24	3	12.5	29.0
Total	18	17	9			Operability, 23.6 per cent.			

Number of cases treated with radium alone...............	76
Number of operable cases treated with radium alone....	18
Number traced	17
Number of these patients living five years or longer......	9, or 52.9%

Table 8 presents the statistics compiled by Schmitz of radium results in several clinics by the use of radium, radium and roentgen rays, or surgery.

CONCLUSIONS

1. We believe that the initial dose of radium should be a test dose to ascertain the reaction of the malignant growth and of the normal tissues to radium activity.

2. It has been our aim to give only a dosage sufficient to inhibit the tumor growth and to produce scar tissue in the cervix and adjacent structures. It is by this production of dense scar tissue that the blood vessels are occluded and the cancer cells starved and isolated.

3. The surgeon himself should be acquainted with the clinical progress of the reaction to radium going on in the cervix.

4. Regular monthly visits on the part of the patient and personal inspection by the surgeon himself are absolutely necessary to check the renewed activity of the malignant growth in its incipience by subsequent radium treatment.

Table 8.—*Percentages of Operability, and Relative and Absolute Curability of Cervical Carcinomas for Different Methods of Treatment* *

Clinic	Operability, per Cent.	Total Number	Total Number	Relative Cures	Absolute Cures	Method of Treatment
Clark, J. G.	17.0	140	12	27.2	8.6	Radium
Bailey and Healy.....	22.0	155	17	26.4	9.2	Radium
Kehrer................	45.7	129	36	40.7	27.8	Radium
Ward and Farrar.....	23.6	72	17	43.6 (3 yrs.)	23.6	Radium
Heyman †............	....	217	44	....	20.2	Radium
Doederlein............	32.6	755	103	30.3	13.2	Radium and roentgen rays
Baisch................	51.0	198	28	23.8	14.1	Radium and roentgen rays
Schmitz..............	17.5	103	15	50.0	14.6	Radium and roentgen rays
Johns Hopkins.......	52.1	387	102	46.5	26.6	Surgery
Stoeckel..............	70.6	350	98	35.4	26.6	Surgery
Graves................	64.0	181	34	31.2	18.5	Surgery

* After Schmitz.
† Surg., Gynec. & Obst. **40**: 161 (Feb.) 1925.

5. We believe that, if we succeed in arresting the progress of the disease by inhibiting the growth and imprisoning the cancer cells in cicatricial walling in and connective tissue, we are exposing the patient to a greater risk in opening up these barriers by the necessary trauma incident to a hysterectomy, and feel that we may do better for our patients if we rely on radium alone in view of our own statistics and those reported by other clinics.

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ABSTRACT OF DISCUSSION

Dr. George Gray Ward, New York: I purposely waited five years before quoting any figures from our clinic. At the last meeting of the New York State Medical Society, Dr. Farrar made a preliminary report on our work in which a discussion of the technic and action of the radium on the tissues and the clinical course observed in response to the radium was covered. We believe that the patients do better after irradiation if their resistance is previously fortified. Whenever possible we give a prophylactic blood transfusion before or at the time of irradiation. These patients are poor risks. They generally are anemic, and a considerable amount of toxin is liberated at the time of irradiation which makes it precarious for these patients, unless they have the resistance to combat it. We think that some of our results have been decidedly bettered by giving a prophylactic blood transfusion of 500 c.c. I wish to emphasize that personal follow-up and observation of the clinical course are very important factors in obtaining results. I do not believe that the best results can be obtained, however, with a uniform dosage for all cases, as the type of cell varies in different parts of the cervix, as I brought out in the discussion a year ago before this Association. We have noted a considerable difference in reaction in cases with apparently the same type of cell, so we can never be sure what the reaction is going to be. This constant observation by the surgeon in his follow-up is of importance because he can then judge of how the radium has affected the tissues. We expect where there is an intense hyperemia following the application of radium, with the patient still in the hospital, that a month later there will be considerable slough. Later, granulations form with subsequent cicatrization, characterized by pallor or anemia of the tissues, which is a very valuable guide as to the effect of the radium. If we see the patients in the follow-up during the course of their convalescence, we know what is taking place and we can repeat the irradiation whenever necessary to quench the fire which shows signs of rekindling, before it has gathered much headway. Many of our subsequent irradiations may be only with the needles in small recurrent nodules which show a beginning recrudescence. Among the operable cases treated by radium alone, with a moderate amount of radium, 52.1 per cent. of patients are living after five years; and, taking all classes of cases, 25.9 per cent. of patients are living. It seems to me, therefore, that the importance of the propaganda of education of the laity to seek relief early while they are in the operable class is very significant.

Dr. Henry Schmitz, Chicago: This report shows the true value of radiation therapy in carcinoma of the cervix. I can report 183 cases. In Group I cases, relative healing occurred in 80 per cent.; in Group II cases, 33 per cent.; in Group III cases, 11.8 per cent., a total of 189 cases with an absolute curability of 14.2 per cent. Excluding from these statistics the unconclusive cases, the percentage is 22.4. If we consider the results obtained in the clearly operable cases, the operability in our cases was only 16.9 per cent.; then we had thirty-one cases with fifteen five year headings, or 48.4 per cent. The conclusion is that radiation treatment, correctly applied, will probably give these patients a better chance for their lives than they possibly could obtain by operative procedures. I am more and more inclined to confine operation to the very earliest cases of carcinoma of the cervix.

Dr. H. C. Bailey, New York: I have used radium in a somewhat different way. In 1915-1916 I employed small doses, not exceeding 100 mg. Fifty patients, or 10 per cent., are well today. I have believed that in certain early cases only a small dose is necessary, but I had no idea that results such as Drs. Ward and Farrar have shown today could be produced with an amount of radium not exceeding 300 mg. for many years we have been crossfiring with success, but under some disadvantage, because this method takes a large quantity of radium and is, therefore, an expensive form of treatment; moreover, we cannot provide radium for all the patients that come to us. If our results can be improved by using smaller doses, a great deal has been accomplished. I think that these three year results will be reduced but slightly at the end of five years, because if a patient is well of cancer after three years it does not seem very likely that there will be any local recurrence.

Dr. Lilian K. P. Farrar, New York: I wish to speak of the value of uniformity in classifying cases in order that the records in one clinic may be compared with those in another. The classification Dr. Schmitz has given is simple and adequate and if generally used would, I believe, allow better comparison of clinic records. Dr. Bailey spoke of crossfiring. We use radium needles and depend on them for crossfiring. We are using them more and more, and place them in the uterosacral ligaments or into the broad ligaments, as Dr. John Clark first advocated, using a finger in the rectum as a guide and placing the needles one on each side of the cervix, three-fourths inch from its outer margin and slightly posterior to a horizontal line drawn through the cervix to avoid injuring the ureters and blood vessels. Dr. Bailey spoke of the deaths in the three and five year series. There should not be such a great variation in the figures for three and five year cases of cancer were it not for the fact that we count every death as a death chargeable to cancer because it is impossible to make a dividing line as to what should be considered as a death due to cancer and what is caused by intercurrent diseases. We, therefore, include every death occurring after irradiation as a death due to cancer. That is where the difference comes in the three and five year figures, the cause not being entirely that the cancer has progressed.

A CLINICAL CLASSIFICATION OF BRIGHT'S DISEASES *

THOMAS ADDIS, M.D.
SAN FRANCISCO

One hundred years ago, Richard Bright[1] distinguished a small number of patients from all the others at Guy's Hospital by his discovery that their urine contained notable concentrations of protein. In this group he observed a significantly high incidence of edema and cardiac enlargement, but in general the symptomatology was quite variable and, with the exception of what is still too loosely called albuminuria, no clinical constant was found. But continuing to watch his albuminuric patients, he discovered, after their death, one other invariable feature. He established the fact that in every case gross structural abnormalities existed in the kidneys and that, although the renal lesions varied in outward appearance, they all alike were nonsuppurative and bilateral.

Today we still begin where Bright began with the observation that the urine contains protein, and we end where he ended with the study of the structural abnormalities in the kidneys and other tissues. We still find constant only the association of certain urinary and renal changes, and our minds are still as divided and uncertain as was his in regard to the question as to whether these patients are victims of one disease in various stages and intensities, or are suffering from different diseases of diverse etiology. The pathologist cannot give a quite decisive answer to this question. His observation is limited to one moment of time and that moment the last of life, when the original simplicity of the lesion is often obscured by terminal complications, or when the disease is so far advanced that little but fibrous tissue remains and the nature of the primary reaction can be only doubtfully surmised. The question is for the clinician who from day to day can watch the development of the disease from its beginning to its end.

In Bright's time there were no microscopes in the hospital, but if they had been available I believe he would have made a continuous series of observations on the characteristics of the urinary sediment from the first day on which he saw his patients until their death. Although the anatomist Henle[2] laid the foundation for such a study, and although several clinicians, particularly Bartels,[3] demonstrated the value of the method during the latter half of the nineteenth century, their work has not yet been carried to completion. Nowadays we delegate this work to laboratory technicians and so we have forgotten what our forefathers knew. And, also, we are skeptical of the value of observations that manifest so great a variability; for when we examine consecutive collections of urine from a patient we may find in one specimen many casts and red blood cells and in the next, few or none. It is probably this inconstancy that has led those who in our day have most studied Bright's disease to the opinion that in the past the value of the microscopic examination of the urine was overemphasized. Yet the idea that we might learn something important from a systematic and con-

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* From the Medical Department of Stanford University Medical School.

* Read before the *Association of American Physicians*, Washington, D. C., May 5, 1925.

* This work was aided by the Wellington Gregg Fund for the Investigation of Bright's diseases.

[1] Bright, Richard: Reports of Medical Cases, London, Longman, Rees, Orme, Brown and Green **1:** 67, 1827.

[2] Henle, J.: Ztschr. f. rat. Med. **1:** 68, 1844.

[3] Bartels, C. H. C., in Ziemssen's Cyclopedia of the Practice of Medicine, New York, William Wood & Co., 1877.

tinued study of the morphology of the urine remains attractive. It seems plausible that the urine from an actively inflamed kidney should carry with it formed elements which are characteristic of the process of inflammation, and that a kidney in which the lesion is in the main of a degenerative nature should yield a urine whose *sediment is distinctive.*

Acting on this hypothesis, I made a study of the effect of various physical factors on the formed elements of the urine. I found that hyaline casts and all casts whose matrix was hyaline disappeared from neutral sodium chlorid solutions when the salt concentration was reduced to less than 0.5 per cent. When the hydrogen ion concentration of the solution was varied, it was observed that the less the hydrogen ion concentration the greater was the concentration of sodium chlorid necessary to keep the casts from dissolving. Now I had already noticed that those specimens of urine in which few or no casts were present were either dilute or alkaline or had both of these properties in lesser degree. It seemed likely, therefore, that variability was no inherent characteristic of cast formation, but might be the result of changes in the degree of dilution and reaction of the urine. This proved to be the case, since the variability was replaced by a satisfactory degree of constancy whenever the conditions were such as to induce the secretion of concentrated and acid urine. These requirements are usually met if the patient observes the rules outlined below.

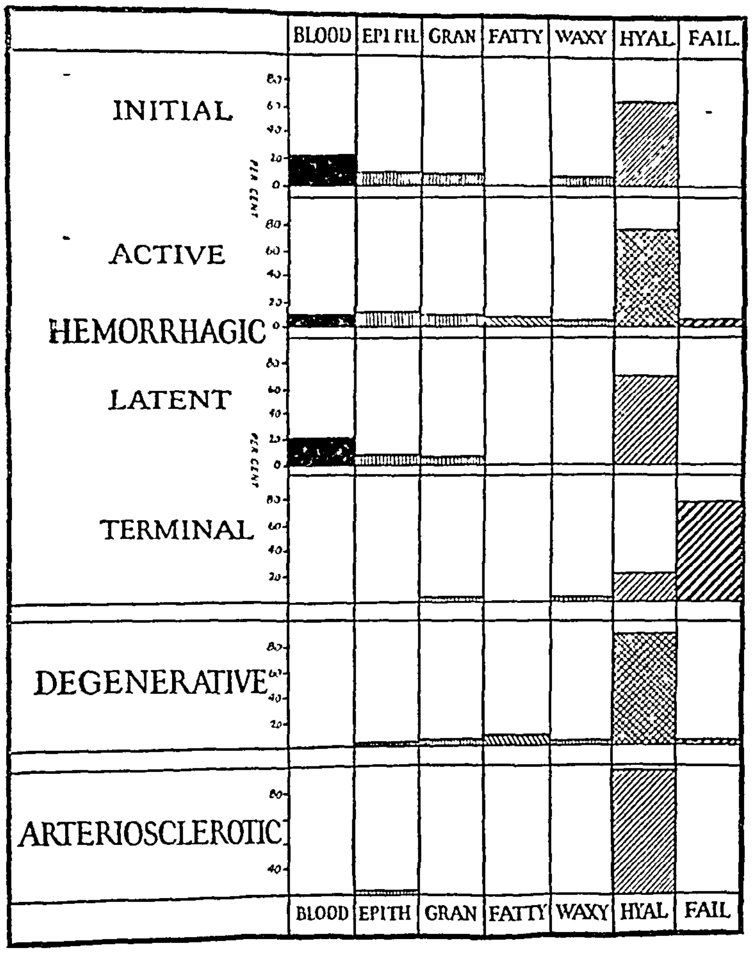

Chart 1.—Differential cast count.

THE METHOD

It is essential to secure the intelligent cooperation of the patient, and so written instructions are given to him and some time is spent in making sure that he fully understands what is required. He is asked to take his usual breakfast next morning, including his coffee, tea or milk, but is told that thereafter he must abstain from all fluids during the day and night until the urine has been collected on the following morning. Fluids are defined as all substances that can be poured from one vessel into another. In other respects his usual diet is left unaltered and he is specifically asked not to take more fruit than is customary, even though he may become thirsty. The urine has usually been collected between 6 p. m. and 6 a. m., because immediately after 6 a. m. the patient takes urea and large amounts of water in preparation for a test of functional capacity in which the measurements are made between 9 a. m. and 12 noon; but if only the sediment is to be studied, the collection may run from any convenient hour in the evening until the patient rises from bed in the morning. The only essential points are that the bladder should be completely emptied at the commencement and at the end of the collection and that the times should be noted exactly. Unless there is a considerable volume of urine in the bladder, it often does not completely empty itself, and so the patient is asked not to urinate during the afternoon of the day on which the collection is commenced, and to void the entire night urine when the collection is completed. There is no difficulty in this except for patients in the terminal stage, and in these it is inadvisable to restrict fluids unless certain dietary measures are first instituted. The time at which the collection is begun and the time at which it is ended must be written by the patient on a label on the bottle into which the urine is voided. It is always necessary to emphasize the point that the urine passed at the beginning must be discarded and not collected at all. The urine is passed directly into a wide necked bottle which has been thoroughly cleaned, washed with distilled water, dried in the inverted position, and finally rinsed out with clean solution of formaldehyd, which is allowed to drain out for a short time before the bottle is closed with a No. 10 rubber stopper. For cell counts in women catheterization is essential, and the nurse must take special pains to make sure that the bladder is really emptied, though even then the possibility of an incomplete collection must be remembered.

Early in the morning, the patient returns with the bottle of urine. It is almost always in a condition suitable for examination. Occasionally, however, it is neutral or alkaline and there is a precipitate of phosphates. If the salt concentration is not too low, hyaline casts may still be found after the urine is cleared by the addition of concentrated acetic acid; but as it is impossible to be certain that partial solution may not have occurred, cast counts are never made on such specimens, though the number of white blood cells and small round epithelial cells may be determined. Still more rarely there is a precipitate of urates, which must be dissolved by placing the bottle in hot water. After the volume of urine has been measured to within ± 2 c.c., the urine is returned to the collecting bottle, the rubber stopper is reinserted, and a thorough mixing is secured by repeatedly inverting the bottle. Immediately thereafter, 10 c.c. is transferred to a special graduated centrifuge tube with a diameter so narrow toward the tip that an accurate reading of small volumes may be made.[4] After centrifugalization of the tube for five minutes at 1,800 revolutions per minute, something may be learned from the appearance of the deposit. In normal persons there is about 0.2 c.c. of what seems to be mucus. In the initial stage of the condition described below as hemorrhagic Bright's disease, if the renal lesion is pronounced, there is a large amount of brown precipitate. In the active stage there are diminishing degrees of the brown color till in some cases it is imperceptible and the sediment is white. In the latent stage there is often no appreciable deviation from what is observed in normal urine. In the terminal stage there is no mucus, and so the cells and casts form a closely packed white deposit at the extreme tip, a circumstance that gives a quite characteristic appearance. In what has been called degenerative Bright's disease, no brown color is ever to be seen, and the amount of cloudy white deposit varies with the number of casts and epithelial cells. Differences are to be seen in the various subdivisions in this group, an excess of mucus, for example, in the degeneration associated with pregnancy, and a rather sparse white sediment from the urine of patients in whom there has been a long standing mixed infection in sinuses leading to dead bone. In arteriosclerotic Bright's disease there is simply the colorless mucus that is obtained from the urine of normal persons.

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[4] Convenient and accurately graduated tubes have been made for us by Messrs. Arthur Thomas & Co., Philadelphia.

The greater part of the supernatant urine is now decanted and a part of the remainder is removed with a pipet until it is reduced to a volume whose magnitude will vary with the amount and nature of the deposit. In urines in which there is an appreciable concentration of protein, it will be observed that a precipitate appears at the surface of the urine as its meniscus approaches the narrowing tip of the tube. In such cases it is well to add a few drops of 1 per cent. sodium chlorid solution and again draw the fluid off until a convenient volume has been reached. It is assumed that all the casts and cells from the 10 c.c. sample of the urine are concentrated in the volume that has been selected, and an even dispersion of these elements is now secured by repeatedly drawing up and blowing out the fluid with a capillary pipet. A drop is then introduced into each side of a blood counting chamber, and the number of casts is counted under the low power over all the ruled areas. The area counted depends, of course, on the concentration of casts. In the urine of normal persons there are very few casts, and 10 drops have usually been examined. When casts are numerous, the deposit is diluted to from 1 to 5 c.c., and only 2 drops are counted over a known area. The cells are counted under a high dry lens and usually over unit areas of 0.1 sq. mm. It sometimes happens that the cells can be more conveniently enumerated in a larger volume than is suitable for the casts, and in such cases the sediment is diluted with salt solution to any required degree. The differential cast count is made, as a rule, while the casts are being counted; but, particularly in the latent stage of hemorrhagic Bright's disease, when the number of casts is small, it is best to obtain a more concentrated mixture by centrifugalizing urine pipetted from the bottom of the collecting bottle after it has stood still for an hour or more.

The calculations are rather cumbersome, but all arithmetical labor may be avoided by using a slide rule. In the form of blood counting chamber that is now in general use, the total ruled area is composed of nine large squares, each of which is 1 sq. mm. in area. Since the chamber is 1 mm. deep, the volume contained over the total ruled area is 0.9 c. mm., or 0.0009 c.c. If ten areas are gone over, the volume of urine in which casts are counted is 0.009 c.c. Suppose that in this volume ninety casts are found and that the volume of urine or salt solution in which the sediment was mixed was 0.9 c.c. In that case, $90 \times \frac{0.9}{0.009}$, which is 9,000, is the number of casts in 0.9 c.c. But all the casts in 10 c.c. of urine were concentrated in that 0.9 c.c. volume, so 9,000 is the number of casts in 10 c.c. of the urine. If the urine volume for twelve hours was 300 c.c., the number of casts in twelve hours is $9{,}000 \times \frac{300}{10}$, or 270,000. The same method of calculation is used in the cell counts. The general formula is as follows:

$$\text{No. counted} \times \frac{\text{Vol. in c.c. in which sediment was mixed}}{\text{Vol. in c.c. in which count was made}} \times \frac{\text{Vol. of urine in c.c. per 12 hours}}{10} = \text{No. in 12 hours' urine.}$$

The amount of protein is determined on the supernatant fluid obtained after centrifugalizing the urine. We use a method developed in this laboratory by Shevky and Stafford,[5] which is applicable even when the concentration of protein is low. The results are expressed as mg. for each twelve hours.

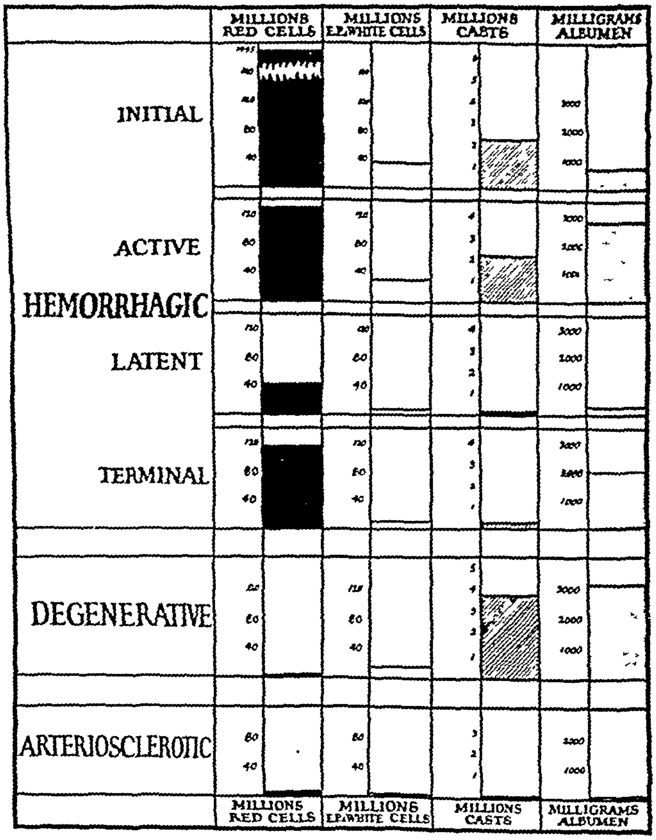

Chart 2.—Sediment and albumin (twelve hour urine).

Seven years ago, I began to make what might be called differential cast counts. Four years ago, the enumeration of casts was begun in urines collected under the conditions described above. During the last two years, the number of red blood cells and of white and small round epithelial cells has also been obtained. Each addition to the sum of quantitative data has strengthened a growing sense of lasting and deep lying divergences in the nature of the renal lesion in patients who on other grounds are sometimes indistinguishable, and a conviction that by this method it is possible for the clinician to follow the changes in the activity of the renal lesion in every patient from the beginning to the end.

THE CLASSIFICATION

In a rough preliminary way, Bright's disease in general may be defined as including all those conditions which are associated with the appearance in the urine of more than the usual amount of protein and more than the ordinary number of casts. The results that are presented in Charts 1 and 2 are the averages of 140 patients whose urine contained albumin and casts. They are an unselected and consecutively observed group of patients in that they include *all those in whose urine* complete counts were made and who were adequately investigated from a more general point of view. But patients with cardiac decompensation, patients with the slight albuminuria that often accompanies fever, and a few instances of what was believed to be "orthostatic albuminuria" were excluded. Finally, it should be noted that, as a rule, only patients with very definite albuminuria were referred for investigation, so that in all probability a large number of cases that would have been classified as "arteriosclerotic Bright's disease" were passed over. The undoubted numerical superiority of this group is not represented by the number I have examined.

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[5] Shevky, M. C., and Stafford, D. D.: Clinical Method for Estimation of Protein in Urine and Other Body Fluids, Arch. Int. Med. 32: 222 (Aug.) 1923.

The results of the examination of the urinary sediments of the patients who were investigated fall naturally, on qualitative as well as on quantitative grounds, into three main divisions; and since these divisions seem to be corroborated by many significant facts elicited by other methods of examination, I have become persuaded that they represent three diseases that are pathologically and etiologically distinct and separate. In order to avoid the confusion that would result from the use of terms that are familiar but have been used with a somewhat different meaning, I have reverted to a purely descriptive terminology and have called the first division hemorrhagic Bright's disease (seventy-one cases), the second degenerative Bright's disease (forty-three cases), and the third arteriosclerotic Bright's disease (twenty-six cases), as shown in Chart 3.

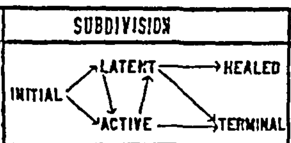
DIVISION	SUBDIVISION	ETIOLOGY
HEMORRHAGIC		STREPTOCOCCAL
DEGENERATIVE	CRYPTIC POISONS OF KNOWN CHEMICAL CONSTIT PREGNANCY TOXEMIA TOXEMIA IN GENERALIZED INFECTIONS TOXEMIA IN FOCAL INFECTIONS TOXEMIA IN MIXED INFECTIONS	UNKNOWN e.g METALS, MALARIA, JAUNDICE TOXIN LATE PREGNANCY e.g PNEUMONIA, DIPHTHERIA. e.g STAPHLOCOCCAL SINUS INFECTION e.g INFECTED TUBERCULOUS OSTEOMYELITIS.
ARTERIOSCLEROTIC		UNKONWN

Chart 3.—Bright's diseases.

1. HEMORRHAGIC BRIGHT'S DISEASE

The first disease is the glomerular nephritis of the pathologists, but for clinical use I think that hemorrhagic Bright's disease is a better name. It emphasizes an outstanding and constant clinical feature of the condition, the presence of blood casts and of an abnormal number of red blood cells in the urine.

The initial stage is a sequel of streptococcal infections. It frequently escapes notice, but in its more severe forms the urine contains so many red blood cells that it has a mahogany brown appearance. When the copious flocculent precipitate is examined, it is found to consist in the main of lysed and distorted red blood cells, with a considerable admixture of pus cells and epithelial cells. Among this cellular débris there are casts that vary from lemon yellow to dark brown. Red blood cells can be seen incorporated in the matrix of those of lighter color, but in the majority only fused orange colored masses can be seen. These are the blood casts that are pathognomonic of hemorrhagic Bright's disease. In other respects the symptomatology is very variable, but there is usually a moderate increase in diastolic pressure and often a slight, generalized edema. When the streptococcal infection has run its course and has disappeared, as happens for instance in scarlet fever, there is a rapid subsidence in the activity of the renal lesion and ultimately a healing, with a defect that is compensated by hypertrophy.

The latent stage is probably due to the continuance of focal streptococcal infection. With the exception of the indications to be obtained from the sediment it is entirely latent, and even the urine may be passed as normal unless it is concentrated. I have had patients remain in this stage for periods of time up to ten years, apparently in perfect health, but always with an abnormally high number of red blood cells and a few blood casts. The very slowly progressive glomerular destruction is met by a steady compensatory hypertrophy.

The active stage sometimes follows the initial stage, or it may be the result of an exacerbation of the continuing streptococcal infection in a patient with latent hemorrhagic Bright's disease. After some time, a fatty degeneration of the tubule cells is apt to supervene. It is accompanied by an increase in the number of casts and in the rate of protein excretion, and by the appearance of fatty casts and of fat droplets on all the hyaline casts. In untreated cases there is general anasarca. If, as not infrequently happens, there is no increase in blood pressure, it is only by the large number of red blood cells and the finding of an occasional blood cast that the condition can be distinguished from what Volhard and Fahr[6] call "genuine nephrosis." With the disappearance of the infection the lesion may become latent and heal; with its continuance it will progress, either directly, or after an interval of latency, to the terminal stage.

As the terminal stage approaches, there is a gradual but very radical alteration in the nature of the urinary sediment. As one after another of the inflamed glomeruli become completely disabled and fibrosed so that urine no longer flows down their tubules, fewer red blood cells and pus cells come from the shrunken kidney, and blood casts are hard to find. When the amount of secreting tissue is decreased to less than one third of its original amount, the urea concentration of the blood begins to rise; and, as the kidney grows smaller and smaller, the blood urea concentration rises higher and higher until under its influence the small remnant of renal tissue is secreting a urine that is constantly dilute. Then nothing of what was previously found remains, and all the casts are renal failure casts.[7] It is often not until this stage is reached that the patient with hemorrhagic Brights disease comes under medical observation. He may tell us that he has always been strong and well until he noticed an unaccountable lassitude and weakness, or an unexplainable vomiting or a sudden dimness of vision. Sometimes he remembers a long past illness which might have been the initial stage of hemorrhagic Bright's disease; sometimes the history is clearer and more convincing; occasionally the transition from an active or latent stage has been observed and recorded.

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[6] Volhard, E., and Fahr, T.: Die Brightsche Nierenkrankheit, Berlin, Springer, 1914.

[7] Addis, Thomas: Renal Failure Casts, J. A. M. A. 84: 1013 (April 4) 1925.

2. DEGENERATIVE BRIGHT'S DISEASE

The second disease has been called degenerative Bright's disease because the constant and most prominent feature of the sediment is the large number of epithelial cells in various stages of granular or fatty degeneration. Unfortunately, in any urine many of the cells are so disintegrated that it is impossible to determine whether they were originally epithelial or white blood cells. I have therefore counted both of them together, but in doing so have not recorded a very evident distinction between degenerative and hemorrhagic Bright's disease, the preponderance of epithelial cells in the former and of white blood cells in the latter. However, the charts show the relatively small number of red blood cells, the heavy proteinuria, the large number of casts, most of which are hyaline sprinkled with fat droplets along with some epithelial, granular and fatty casts and, in terminal stages, renal failure casts.

Degenerative Bright's disease is not, like hemorrhagic Bright's disease, a unity, but is only a convenient term under which to comprise all those many pathologic conditions which may give rise to degenerative changes in the kidneys. They may be summed up under six headings.

1. In a number of patients, no cause for the condition has been discovered and this group has therefore been called cryptic degenerative Bright's disease. They are usually not seen until edema has developed, so that little is known of the initial stage except that it is apparently not related to any known or obvious infection or illness. The disease may pass through active and latent stages to complete recovery, or may gradually progress to a termination in uremia. In the active stages there is marked lipemia, and I have found that enormous doses of thyroid preparations may then be taken without producing any effect on the basal metabolism. The sediment results that have been charted are the averages from patients in this group.

2. There are some patients with degenerative Bright's disease in which we know the chemical constitution of the causative agent. Mercury, chromium and uranium salts are examples, and the degenerations seen in jaundice, and in some instances in malaria, might be included here.

3. The unknown toxin that is derived from the fetus in the latter half of pregnancy produces a degenerative Bright's disease which is accompanied by hypertension. In our experience, the renal lesion is not serious because it is so short-lived; but in patients who are allowed to remain in a toxic state for weeks or months, a lasting vascular damage may be produced which may ultimately lead to death.[8]

4. The toxemia that may accompany any generalized infection is apt to produce a slight cloudy swelling of the kidney. It occasionally happens that the degeneration takes an extreme form and is associated with much desquamation of renal cells, many epithelial and granular casts and much protein.

5. Focal infections are not often associated with any but minor grades of renal degeneration, but I have seen some patients with staphylococcal focal infections who have developed proteinuria and edema. This type has been recently described in children by Clausen.[9]

6. The mixed infections that are found in long standing osteomyelitis with sinus formation tend to produce the waxy kidney, and in some of these patients there is also a slowly progressive renal degeneration that may lead to uremia.

3. ARTERIOSCLEROTIC BRIGHT'S DISEASE

The third disease, arteriosclerotic Bright's disease, is of great importance because it occurs more frequently than any other form of Bright's disease. But so far as the kidney is concerned, its importance is of a negative character; for when the diagnosis has been made it is no longer necessary to consider the renal lesion as a factor in the management of the patient. These are the patients with hypertension who are often told that they are suffering from "chronic interstitial nephritis" and who consequently live in fear of death in a uremia that never comes.

Bright's disease in all its forms is always very much more than a disease of the kidneys, and no classification that is based only on the nature of the renal lesion can possibly be adequate. Vascular abnormalities and changes in other tissues are often more important than the structural or functional alterations in the kidney. But our clinical knowledge of these extrarenal lesions is negligible. We are only beginning to develop the exact and quantitative methods that are essential for the investigation of such changes, and as yet we can detect them only when they grossly deviate beyond the limits of our ill defined standards of normality. So, for the present, we must be content to use the knowledge of the alterations in the structure of the kidney that is given by a study of urinary sediments as a means whereby we may distinguish groups which in their nature are radically divergent, in the expectation that such differences in the pathologic condition of the kidney may be associated with a similar divergence in the nature of the changes in other tissues. But while acting on this hypothesis it must not be forgotten that the method has a very obvious defect. When a lesion in any part of a glomerulotubular element prevents it from forming urine, we are also prevented from learning anything about the lesion from the casts and cells in the urine. This is where determinations of the functional capacity of the kidney become valuable, for a loss of renal tissue may be ascertained by a measurement of function that is quantitatively related to the mass of still functioning renal tissue.[10] In spite of this defect in the sediment method, it nevertheless remains true that by enumerations of the formed elements of the urine repeated in the same patient from day to day, from month to month, and from year to year, we may gradually construct a clear picture of the genesis, the rise and fall, and, if fibrosis advances, the terminal diminution in the activity of the renal lesion; and, finally, the classification that grows out of such observations on the urine of different patients is, I believe, an advance toward a purely etiologic classification, the classification that must always remain the one toward which we strive.

CONCLUSIONS

1. The casts and cells of the urine may be examined and enumerated under conditions that preclude the variability induced by changes in the dilution and reaction of the urine.

2. The results obtained with this method, in conjunction with other clinical evidence, lead to the conclusion that three diseases, which are pathologically and etiologically distinct and separate, are included under the general designation Bright's disease.

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[8] Spalding, A B; Shevky, M. C., and Addis, Thomas: Am J. Obst. & Gynec 4:350 (Oct.) 1922.

[9] Clausen, S W.: Parenchymatous Nephritis, Am. J. Dis Child 29:581 (May) 1925.

[10] Addis, Thomas: Renal Function and Amount of Functioning Tissue, Arch. Int Med 30:378 (Sept) 1922.

LESIONS OF THE EXTREMITIES ASSOCIATED WITH DIABETES MELLITUS *

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It is a truism that persons with diabetes mellitus are prone to develop infection and that the feet are frequently involved. It is also well known that gangrene of the extremities is a common complication of this disease. These two factors, infection and arterial occlusion, produce in the extremity, and particularly in the lower extremity, a variety of lesions that it is important to recognize from the standpoints of prognosis and treatment. A series of fifty-two cases of diabetes mellitus with associated lesions of the extremities has been observed in the University Hospital during the last four years. The cases were unselected and represent 8 per cent. of all cases of diabetes mellitus seen during this time. This incidence is probably higher than would be found in ordinary practice. It is our purpose in this communication to analyze and classify the cases in this series and to discuss the diagnosis, prognosis and treatment of each class.

Table 1.—*Classification of Lesions*

Type	Number	Male	Female
Ulcer	8	0	8
Infectious	24	14	10
1. Soft parts	3	1	2
2. Osteomyelitis	11	7	4
3. Osteomyelitis, secondary gangrene	10	6	4
Gangrene	20	14	6
Uninfected	15	11	4
Secondary infection	5	3	2
Total cases	52	28	24

The subject is important because these lesions are a common cause of death in diabetes (20 per cent. according to Joslin[1]), and because there is often a vagueness in their diagnosis that leads to the institution of improper therapy. It has been common to group all these lesions as diabetic gangrene. A careful examination, however, will permit of the ready separation of these cases into distinct classes with important differences in prognosis and treatment. The general distribution of these classes is shown in Table 1, and other significant data are presented in Tables 2 and 3.

Table 2.—*Etiology*

Type	Average Age	Arteriosclerosis		Varicose Veins	Average Weight at Onset of Diabetes, Pounds	Average Duration of Diabetes	Type of Diabetes
		Moderate	Marked				
Ulcer	57.6	5	3	Usual	179	7.3 yr.	Mild
Infectious:							
Soft tissue	53.6	3	1	Rare	217	3.8 yr.	Mild
Osteomyelitis	52.0	8	3	Rare	206	7.6 yr.	Mild
Gangrene	59.3	1	8	Rare	196	11.8 yr.	Mild
Gangrene:							
Uninfected	64.6	0	15	Rare	210	12.7 yr.	Mild
Infected	61.0	0	5	Rare	210	9.8 yr.	Mild

As an outstanding fact, all the patients in the entire group had mild diabetes of long standing. In no case had there been adequate treatment, and glycosuria had been uncontrolled throughout the course of the disease. In fact, the very mildness of the disease was responsible for its neglect by both patient and physician. It was only with the advent of visible complications that the patients came for treatment. This furnishes a sound reason for the control of even the mildest diabetes.

It will be noted that nearly all these patients were obese at the onset of the diabetes.

CLASSIFICATION

All these patients presented lesions in the lower extremity, and none had significant lesions in the upper extremity. The cases fall logically into a definite classification based on the local findings.

1. *Ulcers*.—In this group are found intractable ulcers, usually on the lower leg and of the type commonly associated with varicosities. They vary in size and character with their chronicity. The infection present is mild and rarely spreads to the surrounding parts, although it may serve as a starting point for widespread infection. Of these patients, eight, all women, had ulcers that had not responded to local treatment. All of them had definite varicose veins, which were thought to be responsible for the ulcers. It is of interest to note that the knee-jerks were present in all but two of the patients. Under dietetic treatment, the ulcers healed promptly with a continuation of the same type of local treatment that had failed previous to the institution of the diet. One case failed to heal, that of a woman with a nonfilarial elephantiasis with ulceration which antedated the diabetes by twenty years.

Table 3.—*Clinical Examination*

	Fever	Leukocytosis	Anemia	Blood Pressure	Knee Jerks			Roentgen Ray
					+	—	?	
Ulcer	0	0	0	Normal	6	0	2	Negative
Infectious:								
1. Soft parts	+ or 0	+	0	Low	4	0	0	Negative
2. Osteomyelitis	+	++	+	Low	8	2	1	Osteomyelitis
3. Osteomyelitis with gangrene	+	++	+	Low	4	4	1	Osteomyelitis and arteriosclerosis
Gangrene:								
1. Uninfected	0	0	0	High	11	2	2	Arteriosclerosis and bone destruction
2. Infected	+	++	+	High	2	2	1	Arteriosclerosis and bone destruction

2. *Infection*.—In twenty-four cases, infection was the initial event. The portal of entry was through some break in the skin, as an abrasion from a shoe, the trimming of a corn, a crack in a callus, all trauma of a minor nature in an unwashed foot. From here the infection spreads slowly or rapidly. The local picture presented at the time of the examination depends on the duration and extent of the infection and on the quality of the circulation. Three distinct groups can be recognized.

(*a*) Soft Tissue Infection: While there are only three of these cases in our series, it is probable that all twenty-four members of the infected class were originally in this group for varying lengths of time. These patients may have any type of infection, from small localized abscesses to a widespreading cellulitis. The circulation is adequate, and the local picture is that of infection in a nondiabetic person of low resistance. In all three cases, recovery followed incision and drainage of the abscess combined with appropriate management of the diabetes.

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* From the Departments of Surgery and Internal Medicine, University of Michigan Medical School.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1923.

(*b*) Osteomyelitis: These cases are common, eleven falling into this group. The infection occurs from the outside as an infection of the soft parts which progresses to an involvement of the bone. They may exhibit any degree of acuity and any amount of bone involvement, from necrosis of a single phalanx to destruction of all bones of the foot. The so-called perforating and trophic ulcers usually lead to necrotic bone, these being in reality sinuses communicating with osteomyelitis. That this is true is readily demonstrable by roentgenograms. The extent of bony destruction is often far greater than one would suspect from the superficial evidence.

Table 4.—*Infection of Soft Parts*

Case	Lesion	Operation	Result
1	Abscess of sole........................	Incision	Healed
2	Abscess of toe........................	Incision	Healed
3	Abscess of dorsum....................	Incision	Healed

It will be seen from Tables 2 and 3 that neither arteriosclerosis nor peripheral neuritis is an essential etiologic factor.

Local examination usually shows a swollen, hot, red, tender foot with one or more discharging sinuses. Pulsation is palpable in the dorsal pedis and posterior tibial arteries. The roentgenogram shows osteomyelitis of the phalanges and adjacent metatarsals, sometimes of the tarsals. The bones are involved in continuity. In mild cases the patient will have little general reaction; leukocytosis, however, is the rule with a temperature ranging from normal to 100 F. Even in the mild cases, the ability of the patient to utilize glucose is decreased by the infection, and dietetic control is more difficult than it was previous to infection. In the severe cases there is a marked general reaction with high leukocytosis, delirium and great prostration. The fever varies from 100 to 102 F., which is lower than would be expected from the other reactions of the patient. The diabetes is controlled only by the use of large doses of insulin. The results of treatment are shown in Table 4. It will be noted that the prognosis in this group is comparatively good, with only two deaths among the eleven patients. In a majority of cases with a localized process, a simple incision and drainage with removal of sequestrums results in a cure. This procedure should be done early to diminish absorption so that the diabetes may be more easily controlled. In this group, amputation is done only in those cases in which there is so much bone destruction that a useful foot cannot be obtained, or in those rare cases in which there is an overwhelming infection of the soft parts and death seems otherwise inevitable.

Table 5.—*Osteomyelitis*

Case	Lesion	Operation	Result	Comment
1	Metatarsals 2 and 3	None	No change	Discharged against advice
2	Phalanx	None	No change	Sinus, 2 years
3	Phalanges metatarsal	Amputation of toe	Healed	
4	Metatarsals 2, 3 and 4	Sequestrectomy	Healed	2 months
5	Metatarsals and tarsals	Sequestrectomy, drainage	Healed	
6	Metatarsals 2, 3 and 4	Sequestrectomy, drainage	Healed	
7	Phalanges	Amputation of toe	Healed	Insulin
8	Tarsal and metatarsal	1. Incision, 2. Sequestrectomy, 3. Amputation, thigh	Healed	Sepsis, insulin
9	Tarsal and metatarsal	Amputation of thigh	Healed	Sepsis, insulin
10	Tarsal and metatarsal	Incision, drainage	Died	11 days postoperative, pyemia; diabetes cont.; insulin
11	Tarsal and metatarsal	Amputation of thigh	Died	Advanced pulmonary tuberculosis; 4 days postoperative; diabetes cont.; metastatic abscesses

(*c*) Osteomyelitis with Gangrene: In this group, infection is present in a foot the circulation of which has been barely adequate. With the establishment of an active infection with its inflammatory reaction, the balance has been destroyed and the circulation further impaired to the point of abolition, and gangrene occurs. The sequence is: soft part infection, osteomyelitis, and an exacerbation of this infection with total occlusion of the sclerotic arteries. These cases present the same clinical picture as those of the previous group, except that advanced arteriosclerosis and gangrene are present. The infection is usually overwhelming and often generalized. It will be seen in Table 4 that the prognosis is poor. Delay is dangerous for several reasons. The continued absorption maintains a septic toxemia. Local spread of the infection is to be expected, and at any time septicemia and pyemia may supervene. In four of six fatalities in this group, a generalized infection was present before operation was done. In three of these cases, either septicemia or pyemia was present when the patient entered the hospital. Early operation might have prevented death. Patient 10 might also have survived if we had not tried conservative treatment first. The presence of infection converts mild diabetes into severe diabetes which is difficult to control even with insulin, and removal of the infection permits a return to the former state.

Table 6.—*Osteomyelitis with Secondary Gangrene*

Case	Lesion	Operation	Result	Comment
1	Tarsus metatarsus, foot	None	No change	Discharged against advice
2	Tarsal metatarsal, foot	Amputation at thigh	Healed	Insulin
3	Metatarsal, foot	Amputation at thigh	Healed	Insulin
4	Metatarsal, foot	1. Incision, 2. Sequestrectomy, 3. Amputation, thigh	Healed	Insulin
5	Metatarsal, foot	Incision and drainage	Died	11 days postoperative; insulin; pyemia
6	Metatarsal, foot	Amputation at thigh	Died	5 hours postoperative; insulin; septicemia; sugar and acetone free
7	Metatarsal-tarsal, foot	Amputatoin at thigh	Died	2 days postoperative; insulin
8	Metatarsus-tarsus, foot	Amputation at thigh	Died	2 days postoperative; insulin; septicemia
9	Metatarsus, foot	None	Died	Pulmonary embolus; insulin
10	Phalanges, foot	1. Incision, 2. Incision, 3. Amputation, thigh	Died	Progressive sepsis; 4 days postoperative; septicemia; diabetes controlled

The *thigh* is selected as the site for amputation because it is the lowest point at which healing is likely to occur, and because the patient is not in a condition to stand a series of anesthetics and operations.

3. *Gangrene.*—In this group are the patients with primary gangrene caused by arteriosclerosis. It pre-

sents two clinical types, depending on the presence or absence of secondary infection.

(*a*) Gangrene Without Infection: This differs in no way from senile arteriosclerotic gangrene in the nondiabetic patient. It is of the dry variety, beginning in the toes, more often in the great toe. Usually there is a period preceding the gangrene in which the foot shows evidence of a poor blood supply by cyanosis, coldness and sometimes pain. Dry gangrene follows, progressing slowly to the establishment of a line of demarcation. Besides the local gangrene, examination shows advanced generalized arteriosclerosis. Symptoms of sclerosis of the cerebral arteries are frequent. The radial and brachial vessels are tortuous and beaded. The aorta is dilated, and myocardial insufficiency is often present. Locally, no pulsation can be felt and roentgenograms show calcification of the vessels of the leg and foot. Fever and leukocytosis are absent.

Table 7.—*Gangrene Without Infection*

Case	Lesion	Operation	Result	Comment
1	Foot	None	No change	Refused operation
2	Foot	None	No change	Operation not advised; age, heart
3	Toe	None	No change	Operation not advised; age, heart
4	Toe	None	No change	Operation not advised; age, heart
5	Foot	None	No change	Refused operation
6	Toe	Amputation of toe	Healed	
7	Toe	Amputation of toe	Healed	
8	Toe	Amputation of toe	Healed	
9	Toe	Amputation of toe	Healed	
10	Toe	Amputation of toe	Healed	
11	Toe	1. Amputation of toe 2. Amputation at thigh	Healed	
12	Foot	Amputation at thigh	Died	24 days postoperative; diabetes controlled
13	Foot	Amputation at thigh	Died	17 days postoperative; diabetes controlled
14	Foot	Amputation at thigh	Died	26 days postoperative; diabetes controlled; sepsis
15	Toe	1. Amputation of toe 2. Sequestrectomy	Died	55 days postoperative; pulmonary embolism; diabetes controlled

Surgical treatment may be delayed until the diabetes is controlled, but the patient eventually comes to operation. In our experience there are two sites at which amputation may be successful. In those cases in which there is gangrene of a toe with a sharp line of demarcation distal to the plantar arch, amputation of a toe usually is successful. The amputation must be done without trauma, no closure attempted, and the wound allowed to heal by granulation. Of course, gangrene of other toes may occur at a later date. If the gangrene extends into the foot either primarily or following a toe amputation, a thigh amputation should be done. It should be emphasized that the sclerosis involves the entire arterial tree, and dissections of amputated legs have shown that the narrowest part of the vessel is often in the first part of the popliteal arteries. Amputations through the leg usually fail to heal because of sloughing of the flaps and are not worth trying. The mortality of this group in which thigh amputation is necessary is high, but in our fatal cases death did not occur immediately from shock or coma, but after a lapse of some weeks. It was difficult to assign a specific cause of death to some of the patients; there was loss of appetite, and they gradually grew weaker and died. It resembled a death from arteriosclerosis. The diabetes is always readily controlled in this group.

(*b*) Gangrene with Infection: In this group the dry gangrene is the initial lesion. Infection occurs later, with immediate rapid spread of the gangrene. The clinical picture eventually becomes that of the group in which infection was the primary lesion with the gangrene appearing secondarily. These combinations of infection with gangrene are, when well established, both gangrene of the moist type. The evidence of arteriosclerosis is the same as in the uninfected gangrene, of which this group originally formed a part. There is no single type of gangrene peculiar to diabetes; as stated by Achard,[2] "There is gangrene in the diabetic but not a diabetic gangrene." As seen in Table 8, the prognosis is grave. The infection and gangrene are progressive, and amputation through the thigh offers the only chance of cure. The progressive nature of the lesion necessitates early operation. At this stage the lesion and treatment are the same as in gangrene secondary to infection.

COMMENT

The importance of differentiating these lesions of the extremities is clear. The tendency to regard all lesions of the feet in diabetic patients as gangrene undoubtedly leads to amputation of many feet that could be saved and made useful. The majority of our patients with osteomyelitis and infection of the soft parts were discharged with good function after comparatively minor operations. If there is limited gangrene without infection, prompt operation is not imperative and at times a local operation will give a fair functional foot. If, however, there is present severe infection with loss of the circulation, haste is imperative and thigh amputation done early offers the only hope of a successful result.

In all cases of diabetes and complicating lesions of the extremities, it is obvious that the diabetes must be controlled in order to promote healing and prevent death from coma. Only one patient in the entire series died in coma, and this death occurred before insulin was available. Many of the patients, especially those with severe infections, would have died in coma if insulin had not been used. Insulin has its chief value in those patients with severe infections who have lost their tolerance because of the sepsis. It prevents their death in coma and makes it possible to keep them sugar free. Since freedom from glycosuria is essential to healing, this is important. It is a mistake to believe that the use of insulin removes all danger of death in these cases. It does prevent death from coma, but it maintains life in a person with low resistance, damaged vital organs, and of advanced age, in whom complications of sepsis and new infections are likely to occur. The prognosis must still be considered grave in diabetic patients with any type of gangrene.

Table 8.—*Gangrene with Infection*

Case	Lesion	Operation	Result	Comment
1	Foot	Amputation at thigh	Healed	Insulin
2	Toe	Amputation of toe	Died	Insulin; diabetes controlled; 16 days postoperative; septicemia
3	Foot	Amputation at thigh	Died	Insulin; diabetes controlled; 25 days postoperative; stump healed; decubitis
4	Foot	Amputation at thigh	Died	Diabetes controlled; 23 days postoperative
5	Foot	None	Died	Pneumonia

In the members of this series without infection, the diabetes is so mild that liberal maintenance diets can be given unaided by insulin without glycosuria.

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[2] Achard, M.: Les gangrenes des diabetiques, J. d. Pract., April 19, 1924.

The importance of prophylactic measures directed toward improving the hygiene and circulation of the feet is clear and has been recognized for years. It cannot be emphasized too much, however, that the chief prophylactic measure is the rigid control of the diabetes even in those suffering from its mildest form.

The importance of the choice of an anesthetic is well known. On all of these patients we have used spinal anesthesia or one of the gases, either nitrous oxid and oxygen or ethylene. Local anesthesia should not be used in the cases in which there is arteriosclerosis because of the danger of decreasing the already poor blood supply.

SUMMARY

1. Not all lesions of the extremities associated with diabetes mellitus are gangrene.
2. A recognition of the type of lesions gives a more accurate prognosis and rational treatment.
3. These lesions occur in untreated diabetic patients with mild types of the disease, and their occurrence gives reason for the rigid control of all cases of mild diabetes.
4. The use of insulin aids treatment of the types with infections by preventing coma and abolishing glycosuria.
5. The prognosis is still grave in the group in which there are both impaired circulation and infection.

ABSTRACT OF DISCUSSION

Dr. E. P. Joslin, Boston: What impressed me was the fact that Dr. Coller struck at the vital point in these cases, namely, the avoidance of procrastination. One cannot operate on these patients too soon. An infection, if it is that type we are dealing with, makes any diabetes worse, and the best aid for the improvement of the diabetes is to get rid of the infection, so that we must be ready to operate at the earliest possible moment. In the second place, one must not be afraid to operate on these patients, because they will do very well even though the outlook promises to be poor. At this moment there is in a New England hospital a woman who had hemiplegia. Two days after the onset of the hemiplegia she developed gangrene in the right leg. A thigh amputation was done and she is doing remarkably well. Not only has the stump healed but the hemiplegia is gradually getting less. Even in a case of this sort, it is worth while to operate. Septicemia occurs quite commonly. One must remember that, but never wait to make a diagnosis of it. Protect the surgeon if you like by making blood cultures at once when the patient enters the hospital, but operate if there is any chance at all. I did not hear what the speaker said was employed as an anesthetic in these cases. McKitterick, working with Dr. Johns and Dr. Leigh, has had a large number of these cases and he has used spinal anesthesia almost exclusively.

Dr. Frederick A. Coller, Ann Arbor, Mich.: It is very gratifying indeed to have Dr. Joslin confirm our belief in the advisability of early operation. I did not say anything about anesthetics because that subject has been pretty well thrashed out. We have used only two types of anesthesia in this group of cases; spinal in a large number of them; but for the minor operations and during the past year I have used ethylene and oxygen entirely with satisfaction. At the present time I am using it entirely. Of course, we do not fear death from coma. I think chloroform, ether and local anesthesia are bad in these cases. Our idea in putting forward this classification was that by following this classification, we have been able to decide early what line of treatment must be adopted, and we have decided, as Joslin has pointed out, that infection in all those cases requires that we cannot operate too soon. In the cases of dry gangrene, without infection, we can take our time. In those cases in which there is circulation, with a local infection, we can save the foot and usually send the patient out without the mutilation that I am sure we, ourselves, used to do amputating in a case that did not need amputation.

TREATMENT OF PERTUSSIS BY ROENTGEN RAY

AN ANALYSIS OF EIGHT HUNDRED AND FIFTY CASES *

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This paper represents an attempt to summarize the outstanding clinical and laboratory findings in 850 cases of pertussis treated by the roentgen ray and observed through the whooping cough clinic of the Boston Floating Hospital. It supplements the original 300 cases reported last year by one of us.[1] In presenting the statistical data, the entire group is utilized, as far as possible, but in certain phases of the work only the supplementary cases are given in detail, as the records and laboratory data are complete only in this group. That the roentgen ray has a real place in the therapeutic armamentarium for whooping cough can be attested not only by our own experience, but by reports from other parts of the United States,[2] from Canada,[3] and from several European clinics.[4]

There are certain points which have been brought out as the study has progressed. It has been interesting to note that, as the knowledge of this means of treatment has spread among both the laity and the profession, the patients have been presenting themselves earlier in the disease, with the result that less marked pulmonary changes have been noted roentgenologically. In this respect, particularly, the incidence of pneumonia complicating the whooping cough has been notably lower than in the original series, in which the patients tended to come for treatment well after the paroxysmal stage had developed.

For purposes of brevity and convenience, the discussion of the statistical findings will be taken up in topical form under the more important headings.

AGE INCIDENCE

It is obvious that whooping cough is a disease of infancy and early childhood. Of the 850 cases, 750, or 88.2 per cent., occurred under 7 years of age, and 260, or 30.5 per cent. of this group, were in infants under 2 years of age. It is a fallacy to presuppose a natural immunity to whooping cough in early infancy, as can readily be observed in a study of these cases, as seventy-two occurred in infants under 6 months of

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* From the Boston Floating Hospital.

* Read before the Section on Diseases of Children at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Bowditch, H. I.: Further Notes on the Treatment of Pertussis by the Roentgen Ray, J. A. M. A. **82**: 1422 (May 3) 1924.

[2] Kingston, J. J., and Faber, H. K.: Notes on the Roentgen-Ray Treatment of Whooping Cough, California State J. Med. **21**: 429-430 (Oct.) 1923. Smith, M., and Kirby, A. C.: Use of X-Rays in Treatment of Pertussis, J. Arkansas M. Soc. **21**: 143-146, 1924.

[3] Struthers, R. R.: Roentgen-Ray Treatment of Pertussis, Canadian M. A. J. **14**: 141-142 (Feb.) 1924.

[4] Boner, L.: Radiotherapy of Whooping Cough, J. de radiol. et d'electrol. **8**: 509 (Nov.) 1924. DePuelles, Jose M. L.: Roentgenotherapy in Treatment of Pertussis, Arch. España Pediat. **8**: 614-615 (Oct.) 1924.

age, with ten definite cases noted in infants under 2 months of age. This fact seems of considerable significance from the point of view of developing preventive measures, as the greatest mortality is well recognized to be in the younger age group. It is also interesting to note that while whooping cough ordinarily confers a permanent immunity, like scarlet fever, typhoid and other infectious diseases, a second infection may occur, and three such cases can be found among adults in this series, in which there was a very definite previous history of whooping cough in childhood, with the second infection usually contracted from a child in the family.

Table 1.—*Relation of Age of Patients to Stage of Disease on Admission*

Period of Disease in Weeks	0-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-15	15+	Totals
1............	7	9	5	3	5	5	3	2	3	1	43
2............	20	23	25	13	9	10	5	3	7	3	118
3............	22	19	32	19	23	14	16	4	2	2	153
4............	34	25	16	11	14	16	13	6	11	2	148
5............	20	18	13	9	13	17	11	4	4	0	109
6............	21	7	5	9	10	5	8	2	1	3	71
Over 6........	39	20	18	17	14	17	8	10	4	6	153
Unknown....	12	9	8	9	9	4	0	1	1	2	55
Totals.....	175	130	122	90	97	88	64	32	33	19	850

SEASONAL INCIDENCE

Figure 2 illustrates the well known fact that the height of the disease seasonally occurs in the early spring at about the peak of the curve of upper respiratory diseases. It is exaggerated in this chart, however, because the months of December, January, February and May represent a period of two years, and March and April cover three years. However, even after dividing by the necessary figure, 2 or 3, March and April still represent a very definite and sharply defined peak, with an average of nearly twice as many cases as in any other month of the year.

Thus we see that climatic conditions play an important part as accessory factors in producing disease. This is borne out by the observations of one of us that whooping cough in the tropics is of comparatively rare occurrence and usually of a very mild type, most cases probably passing undiagnosed.

DURATION ON ADMISSION

Table 2 brings out the point mentioned in the introductory paragraph, that there has been a very marked tendency for patients to appear earlier for treatment. This observation is lost in Table 1, which is inclusive of the entire series of 850 cases.

The relation of age is of particular importance in interpreting the results of treatment, especially the blood findings, the normal variation in the differential blood count at different ages is so marked. Furthermore, it emphasizes the fact, which we have already recorded, that the treatment benefits the patients about equally, regardless of the stage of the disease, in reducing the severity and the number of the paroxysms.

SYMPTOMATOLOGY

In regard to the symptoms on admission, the additional series of 550 cases shows no essential differences in the incidence of the various pathognomonic symptoms. These are chiefly the presence of a paroxysmal cough, usually accompanied by a definite inspiratory difficulty, terminating in the characteristic whoop, cyanosis and vomiting. In addition to these cardinal symptoms, some of the more severe cases presented other less commonly found symptoms—epistaxis, conjunctival hemorrhage, hematemesis, melena and, occasionally, convulsions.

In the entire group of 850 patients, there have been fourteen who have had convulsions. These were all infants, all but two being under 8 months of age. One of the group was moribund on admission. The other thirteen have been among the most dramatic in the results of the treatment. Always within twenty-four hours, and usually within from six to eight hours, the convulsions ceased.

This raises a point of clinical interest. In the German literature, particularly in a paper by Gottlieb and Möller,[5] it seems to be generally held that patients with whooping cough who develop central nervous symptoms with actual convulsions rarely recover. This has not been our experience, and the use of the roentgen ray as a therapeutic agent in the treatment of these cases alone seems entirely to justify its place in therapeutics. The question as to the etiology of the convulsions in these cases is of theoretical and possibly of practical importance. Can they be considered as directly due to the toxic action of the products of *Bacillus pertussis* acting on the central nervous system, or are they a manifestation of a latent tetany lighted up by the infection? Is the benefit derived from a similar ionization of the combined calcium of the blood serum as results from the treatment of tetany by the ultraviolet ray, or is it simply a mechanical result diminishing the degree of congestion around the tracheobronchial lymph nodes, thus reducing the reflex nervous response of the autonomic system? In this regard it is to be regretted that these studies did not include calcium determinations of the blood serum, as only in this way can this question be definitely answered. At all events, it opens up a new line of thought in regard both to the mechanism of the treatment and to the etiology of the convulsions complicating severe whooping cough in infants.

BACTERIOLOGY

These studies have confirmed the observations of a number of other workers in whooping cough. The most important bit of knowledge derived is that the infectious period of whooping cough is in the catarrhal stage and that it diminishes very rapidly after the actual paroxysmal period begins. In our work we have found no positive cultures after the second week of the whooping, which represents approximately the fourth week of the disease. This fact, we feel, is of great importance for the following reasons: In the first place, if it is true that whooping cough is infectious only for this comparatively brief length of time, then the fallacy of prolonged quarantine over six to twelve weeks, as is being carried out by various local boards of health, is apparent. In the second place, if it *is* true, then early diagnosis of whooping cough is possible bacteriologically, as has been

Table 2.—*Summary of the Two Series*

Disease Period	Under 2 Weeks	Second Week	Third Week	Fourth Week	Fifth Week	Sixth Week	Over 6 Weeks	Unknown
First 300 cases...	0	4	20	26	33	47	123	47
Present 550 cases	43	114	133	122	76	24	30	8
	43	118	153	148	109	71	153	55

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[5] Gottlieb K., and Möller, B.: Whooping Cough in Infants, Jahrb. f. Kinderh. **100**: 222-236 (Dec.) 1922.

shown by Madsen,[6] Meyer,[7] and their co-workers in Copenhagen. With early bacteriologic diagnosis carried out efficiently by the local boards of health in the same way that it is in the case of diphtheria, typhoid and other infectious diseases, it will be possible to maintain a real quarantine for this brief period of approximately three weeks, which is not possible now with the long theoretical quarantine period. That this long quarantine is a quarantine in name only is borne out by our observations from the histories of the presumptive source of the infection in our cases.

TABLE 3—*Average Lymphocyte Count*

Age	On Admission (378 Cases)	One Week's Treatment (157 Cases)	Two Weeks' Treatment (153 Cases)
0 - 6 months	17,175	15,400	10,250
6 -12 months	19,025	18,300	12,700
1 - 2 years	17,900	17,200	12,300
2 - 3 years	17,950	16,600	11,400
3 - 4 years	16,450	15,200	11,500
4 - 5 years	15,600	13,900	10,000
5 - 6 years	15,400	14,300	9,500
6 - 7 years	14,700	15,300	9,800
7 - 8 years	16,375	14,000	8,700
8 - 9 years	15,825	9,000	9,000
9 -15 years	14,025	10,800	9,250
Average of foregoing averages	16,411	14,636	9,491

The intensive bacteriologic diagnosis has been attempted during the past winter in only approximately 300 cases. In the seventy-seven cases of this group occurring in the first two weeks of the disease, we have secured positive bacteriologic diagnosis in practically 60 per cent. If, however, we subtract the twenty-three cases seen in the first week of the disease, it raises the percentage to a little better than 80 during the second week, which is apparently the most infectious period. In the seventy-five cases seen in the third week, the percentage falls to just under 30, and in the forty-four cases examined during the fourth week, two, or less than 5 per cent., were positive. For this reason, bacteriologic diagnosis has not been attempted during the last few months in any but the early cases Our earlier results were comparable to these figures, but the bacteriologic diagnosis was made only irregularly because of inadequate technical assistance.

HEMATOLOGY

In discussing the differential diagnosis of whooping cough, the question of blood examination is of primary importance. We have available a large number of figures that represent the total white count and the differential polymorphonuclear and lymphocyte counts on admission, at the end of one week, and two weeks after treatment. It is difficult to interpret these without considering them both from the duration of the disease when first seen and the age of the patient, as the normal differential lymphocyte count shows a progressive decrease during the age period when whooping cough predominates. As the differential lymphocyte count is the most important single hematologic finding in making our diagnosis, its interpretation, dependent on these two facts, is somewhat difficult. We have seen extremes in these cases, one of which caused considerable anxiety as to the possibility of its being lymphatic leukemia, as the total white count was just under 100,000 per cubic millimeter, and the differential count 98 per cent. small lymphocytes. The diagnosis of leukemia was excluded only by following the blood picture of this case during the course of the disease and finding it fall to normal as the infection subsided.

As has been shown in a previous paper,[8] the lymphocyte count shows both an absolute and a relative increase, which reaches its maximum about the third week of the disease and then slowly returns to normal. The importance of the blood smear examination was emphasized last year by Heiman,[9] at the annual meeting of the American Pediatric Society. Our figures are of interest in showing the effect of irradiation in bringing this return to normal much earlier. Space does not permit the including of the entire tables giving the total and differential count, but Tables 3 and 4 bring out the essential points.

The average lymphocyte count for all the cases on which we have the data at the time of admission was 16,411. The differential lymphocyte count for the same period was 58.1 per cent. Following treatment, it will be noted from the tables that there was in almost every instance, within a week, a definite reduction in both the total number of lymphocytes and their relative percentage. This is more noticeable in the older age groups, and the actual percentage value of the differential lymphocyte counts in young infants is of comparatively little value from the standpoint of differential diagnosis. However, even in this group it will be noted that the total lymphocyte count is increased to nearly double normal.

Also in regard to the diagnosis of whooping cough by blood studies we have begun to accumulate sufficient data to feel that complement fixation can be of value in the doubtful cases, as it has been positive by the third week of the disease in all the cases in which it has been attempted. This alteration of the serum apparently is only of transient duration, as even two or three weeks after the disease is clinically cured the degree of positive reaction of the serum is definitely diminished. So far we are not in a position to state how long the reaction persists; but it seems as if there must be some permanent alteration of the serum, as the immunity apparently is effective throughout life, except in very rare cases.

TABLE 4—*Average Percentage of Lymphocytes*

Age	On Admission per Age Group (378 Cases)	One Week After Treatment (157 Cases)	Two Weeks After Treatment (153 Cases)
0 - 6 months	64.2	62.6	60.0
6 -12 months	66.0	61.0	55.5
1 - 2 years	68.5	63.0	52.0
2 - 3 years	63.5	55.0	45.0
3 - 4 years	54.0	52.5	41.0
4 - 5 years	60.0	49.0	46.0
5 - 6 years	54.0	47.0	46.0
6 - 7 years	53.0	45.0	39.0
7 - 8 years	52.5	37.0	37.0
8 - 9 years	56.0	35.0	25.0
9 -15 years	48.0	40.0	35.0
Average of foregoing averages	58.1	50.1	43.77

ROENTGENOLOGY

The value of the roentgen-ray examination of the chest has been emphasized in a previous paper by one of us.[10] There are definite pathologic changes associated with pertussis. These differ in certain essentials from the generally accepted picture of chronic bronchitis. The lesion consists of a peribronchial thickening, which is most marked in the descending branches of the bronchial tree and especially in the mesial portions of the lower lobes. There is an accompanying enlargement of the mediastinal tracheobronchial lymph nodes, which is not quite the same in distribution as that noted in bronchitis of other causation. In addition, there is frequently a mottling of the lung shadow suggesting a beginning infiltration or bronchopneumonia. For convenience, in computing our statistics, we have classified these changes into three groups, depending on their degree.

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[6] Madsen, Thorvald: Whooping Cough Its Bacteriology, Diagnosis, Prevention and Treatment, Boston M & S J **192**: 50-60 (Jan 8) 1925

[7] Meyer, A H. Researches on Whooping Cough in the State Serum Institute, Ugesk. f Læger **83**: 523 (April 21) 1921; Laboratory Diagnosis of Whooping Cough at Serum Institute of State, Acta Pediat **1**: 99 (March) 1921; Laboratory Tests for Pertussis, ibid **1**: 99, 1921; Bacteriology of Whooping Cough, Ugesk f Læger **83**: 523 (April 21) 1921; Report of Mme Chievitz and Dr A H Meyer, Copenhagen, Ann de l Inst Pasteur **30**: 503, 1916

[8] Bowditch, H I; Leonard, R D, and Smith, L. W.: Studies on the Roentgen Ray Treatment of Whooping Cough, Am. J. Dis Child. **28**: 322 328 (Sept) 1924

[9] Heiman, H: The Clinical Value of the Routine Examination of Blood Smears in the Diagnosis of Pertussis, Arch Pediat. **41**: 385 (June) 1924

This is best illustrated, perhaps, by Figure 3, which characterizes the three rough roentgenologic groups into which the cases fall. The first consists of a simple peribronchial thickening of a comparatively slight degree. Class 2 consists of cases showing the same process more advanced, and Class 3, those in which there is beginning lung infiltration.

The German literature[5] emphasizes another point which we have not noted with any degree of regularity. It speaks of an *unusually steep slope to the diaphragm*. This is explained as being the result of a reflex nervous mechanism associated with stimulation of the diaphragmatic branches of the phrenic nerves. It is asserted that this occurs early in the disease; but in our experience it has not been noted until the paroxysms have definitely appeared, and then only rarely. We feel that when it is present it is an additional diagnostic point, but that its absence is by no means of significance in eliminating the possibility of whooping cough as a diagnosis.

DIAGNOSIS

From the foregoing discussion, it is apparent that diagnosis can be readily made even in the absence of typical whooping. This is particularly true in the late catarrhal period, when the infectiousness is at its height. The chief points of differential diagnosis are based, first of all, on the clinical history of known exposure and a cough persisting for a longer period than the usual upper respiratory infection. In the second place, a positive bacteriologic diagnosis is absolute, as it is in typhoid, diphtheria, tuberculosis, etc., except possibly in a small group of patients who are potentially "carriers." In whooping cough, however, the carrier is probably not of great importance, as the organism is very readily destroyed and apparently is infectious only in rather large doses. In the third place, an increase of lymphocytes, either relatively or absolutely, and usually both, is of great significance; and, finally, the roentgenologic examination is of great help in establishing a diagnosis.

TREATMENT

The treatment of these cases has fallen into two main groups. First, the series treated by roentgen ray alone, and, second, a group given combined vaccine and roentgen-ray therapy. There is a small series of controls which have not received treatment. This has been a difficult group to secure, as our cases have presented themselves very definitely for roentgen-ray treatment. It is possible to utilize other reported series of cases, notably those of Herrman and Bell[11] and of Luttinger[12] in New York, and of Bloom[13] in New Orleans for this aspect of the work. These give a definitely longer average duration for the disease than we have noted.

We have adhered closely to our original technic in spite of reports from other places suggesting increasing the dose and intervals. We use as a routine the ordinary high tension transformer, with a rectifying device, a Coolidge tube, and a frequency of 60,000 volts. We keep the tube set at 4 milliamperes. We use 1 mm. of aluminum as a filter, and keep the tube distance constant at 28 inches. For children under 1 year of age the total dosage is 12 milliampere minutes given anteriorly the first time and posteriorly the second, and alternating in the same way for subsequent treatments. For children from 1 to 2 years of age we have increased the dosage to a total of 24 milliampere minutes divided equally anteriorly and posteriorly. For children from 2 to 5 years of age this is increased to 32 milliampere minutes similarly given in divided doses, anteriorly and posteriorly. For older children, a total of 40 milliampere minutes has been used. In a small group of specially selected severe cases, more intensive treatment has been employed. The tube distance has been decreased to 15 inches, and by means of small cones the lung hyla have been treated locally, both anteriorly and posteriorly, with 16 milliampere minute doses, a total of 64 milliampere minutes being given. Practically no difference in results has been obtained by these larger doses. The treatment has been given on alternate days for three doses, followed by an interval of one week, when one or two additional treatments have been given at the same interval. In particularly recalcitrant cases, an additional series has been administered.

The effects of the treatment have confirmed in general the earlier results. Roughly, 80 per cent. of the cases have shown a definite diminution in the number and severity of the paroxysms in a time interval ranging from a few hours to a week or ten days. In some of these cases the clinical benefit has been extraordinary. This is particularly true of the group of infants with convulsions, as noted previously. In general, we think it is safe to conclude that the younger patients in the early paroxysmal stage show the most striking benefit. The next group in which the results are most striking is that in which the paroxysms have persisted for a considerable period of time. In this respect the treatment is not specific, as similar benefit has been reported recently by Friedman[14] in the treatment of chronic bronchitis. It is interesting, however, that in his series of cases the best results were obtained in the post-pertussis type of persistent bronchial irritation. This benefit is shared about equally by the various age groups, although it is perhaps true that the younger patients do a little better. It does not seem necessary at this time to go further into statistical detail.

In the second group, consisting of approximately 150 patients who received both roentgen ray and vaccine, the percentage of patients benefiting seems to be practically the same, but the degree of benefit seems to be more marked, and the duration of the paroxysmal stage seems to be reduced more by this combined method of treatment than by roentgen ray alone. This is, of course, a very difficult thing to prove, as we have to rely almost entirely on historical evidence except to a limited extent on the interpretation of the roentgen-ray findings.

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[10] Leonard, R. D.: Use of Roentgen Ray in Pertussis, Am. J. Roentgenol. **11**: 264-267 (March) 1924.

[11] Herrman, C., and Bell, T.: Study of Three Hundred Cases of Pertussis in a Hospital, Arch. Pediat. **41**: 13-28 (Jan.) 1924.

[12] Luttinger, P.: Vaccine Therapy as Routine Treatment in Whooping Cough, New York M. J. **109**: 322 (Feb.) 1919.

[13] Bloom, C. J.: Vaccine Therapy: Most Rational and Effective Method of Treating Whooping Cough, Arch. Pediat. **36**: 1 (Jan.) 1919; Most Rational and Effective Method of Preventing Whooping Cough in Public institutions, New Orleans M. & S. J. **73**: 426 (April) 1921.

[14] Friedman, L. J.: X-Ray Therapy of Chronic Cough in Children, Arch. Pediat. **42**: 208-210 (March) 1925.

In both groups the treatment results, by the end of the second week almost invariably, and in many instances by the end of the first week, in a definite reduction of the size of the hilum lymph nodes and of the peribronchial thickening. This seems to parallel quite closely the clinical course of the disease, and it has been interesting to see how closely the roentgenologic interpretation of the chest films coincides with the history and physical findings of these cases. Certainly more than 80 per cent. of the roentgen-ray readings check almost exactly the clinical condition of the cases.

PROPHYLAXIS

We have commented on the use of pertussis vaccine in the treatment of the disease. In this regard it is perhaps worth mentioning that the vaccine which we have used was one made in our own laboratories. We have a very definite feeling that the discrepancies that have resulted in the literature concerning the value of pertussis vaccine prophylactically as well as therapeutically are the result very largely of the organism utilized in making up the vaccine. The ordinary commercial vaccines that we have had available have not shown an agglutination titer of more than 1:400 when inoculated into rabbits In the same way, most of the strains of pertussis that we have secured from actual cases have similarly shown a low agglutination titer experimentally. However, a certain number of cases have resulted in the isolation of an organism capable of producing strongly positive macroscopic agglutination in dilutions as high as 1:3,200. From one of these strains a vaccine has been made which likewise has been concentrated so that it had a bacterial count of between five and six thousand million per cubic centimeter, approximately three times the concentration of the usual commercial vaccine. This represents therefore theoretically twenty-four times the efficiency of a stock vaccine in producing antibodies in the blood serum. It is not likely that such a quantitative result is possible, but certainly such a vaccine should have a very much higher degree of protective action than the ordinary vaccine. It has seemed to us that this is so. At least, it seems to warrant the further more careful study of the value of vaccines both prophylactically and therapeutically.

We have used our vaccine prophylactically in a series of about sixty children who had not had whooping cough and whose brothers or sisters were receiving treatment for whooping cough at our clinic. In general, the results might be said to be inversely proportional to the stage of the incubation period. If given early enough, complete protection results. If given late in the incubation period or after the prodromal catarrhal stage has begun, then the disease is aborted and runs a shorter and milder course. Even in the treatment of the disease itself some benefit seems to result, but comparatively little should be expected in the way of results after the third week, as the serologic changes with the formation of agglutinating bodies and complement fixing bodies have occurred, and vaccine therapy at the most is going to increase the amounts of these substances. In this respect it probably is of value, as immunity in pertussis seems to be a quantitative rather than a qualitative process. The prophylactic dosage, as we have employed it, has been based on the local reaction. The initial dose has been 0.5 c.c., or 3,000,000 killed bacteria. The second dose has varied from 0.5 to 1 c.c., depending on the degree of the skin reaction, and the third dose has usually been double the second one. The inoculation has been given on alternate days. Therapeutically the same method has been followed, but usually five injections have been given.

MORTALITY

The mortality in the entire group of 850 cases has been extremely low. In the first series of 300 cases, only one death occurred. In the supplementary group there have been only two deaths directly attributable to whooping cough. One of these, as noted above, was the result of a very severe case complicated by bronchopneumonia and convulsions. In the other also there was a diffuse bronchopneumonia when first seen. In addition to these cases there was one case in a child, aged 7 years, who developed whooping cough following a severe case of measles with pneumonia and which was further complicated by the presence of a chronic endocarditis. Two other children in the series have died, but of some other intercurrent infection at least three months after the whooping cough. These we do not feel have any relationship to the disease, especially as the roentgenogram in both instances showed a return to normal. This is, as far as we know, the lowest mortality figure in any comparably sized series of cases, and for that reason is of great importance in emphasizing the value of the treatment, as a number of the patients were almost moribund when first seen.

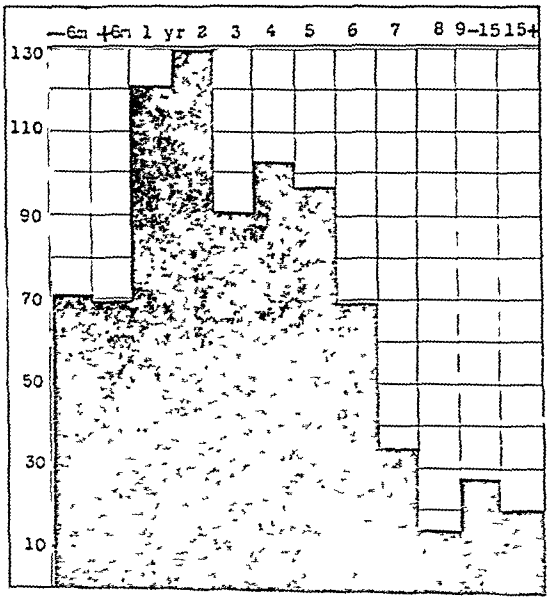

Fig. 1.—Number of cases at different ages.

Henry,[15] in a recent statistical study of measles and whooping cough in Massachusetts, states that 33 per cent. of the cases and 90 per cent. of the deaths from whooping cough occur in children under 3 years of age. In 37,638 cases there were 2,389 deaths, which gives a percentage of 6.4, against the 0.3 per cent. of our series. This was five times the mortality rate from measles during the same interval.

Reiche[16] similarly reports the mortality statistics of Hamburg over a fifty-year period with a mortality rate of 12.2 per cent, or forty times our figure.

COMMENT

The roentgen-ray treatment of whooping cough seems to have passed beyond the experimental stage. The literature of the past year has had a considerable number of reports from Canada, various parts of the United States and Europe, all of which tend to corroborate the feeling which we have concerning its efficacy. Various suggestions as to the mechanism by which the clinical improvement takes place have been advanced, but the general feeling seems to be that it is due to a diminution in the nervous reflex from the pressure of the hilum lymph nodes by a reduction in their size. In addition, there may be some effect on the blood serum, as has been suggested in relation to the etiology of the convulsions in the more severe cases.

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[15] Henry, J E: Statistical Study of Measles and Whooping Cough in Massachusetts, Am J Pub Health 11: 302 (April) 1921

[16] Reiche, F: Mortality of Whooping Cough, Med Klin. 17: 33 (Jan 9) 1921

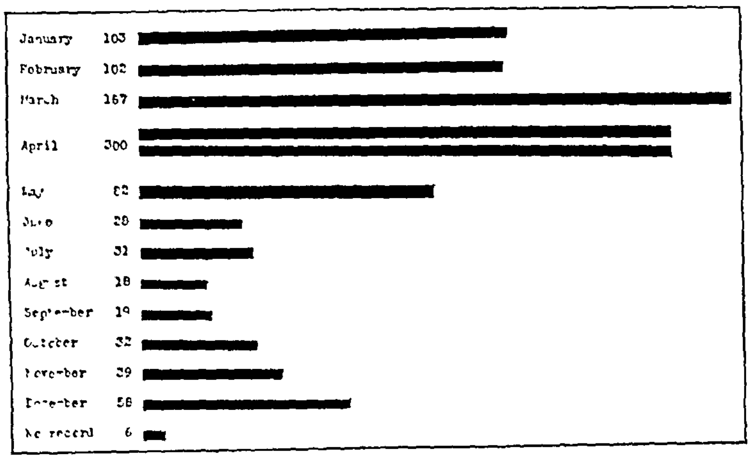
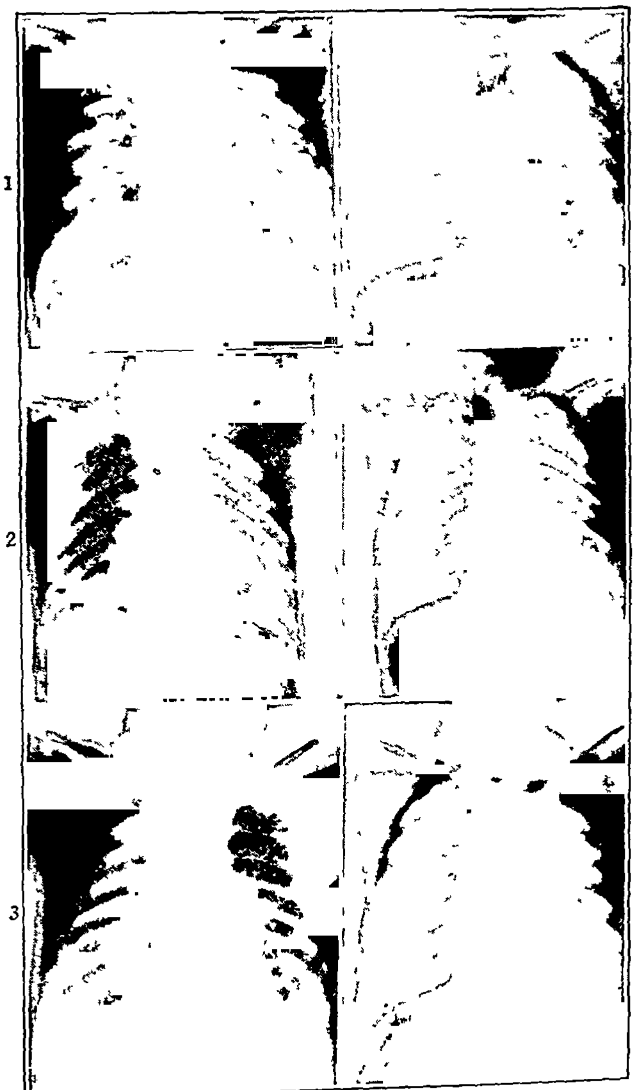


Fig. 2.—Seasonal incidence of 985 cases, including all cases up to May 1, 1925.

The only criticism with which we are familiar in respect to this method of treatment is the possible harmful effect of the roentgen ray on the thymus and thyroid. It is possible that some action on the thymus takes place. It is not measurable radiologically even after three months. In a series of cases as large as this we have had the good fortune to have a considerable number of definite cases of thymic hypertrophy. A number of these we have treated for this condition with larger doses of roentgen ray, and have secured similar favorable results, as well as actual thymic atrophy. The doses are so small ordinarily that it does not seem possible that any damage of physiologic significance can be caused, especially as the entire dosage is considerably less than a skin erythema dose, and in the series of nearly a thousand cases we have not had a single unfavorable report in this respect.

This study emphasizes the importance of early diagnosis and brings out the fact that such diagnosis should be possible in a large majority of the cases through a combination of bacteriologic, hematologic and roentgenologic examinations in conjunction with an adequate history. It further suggests that the present quarantine regulations, which vary widely in different towns within the same state as well as in different states, are purely empiric and have no scientific justification. It should be possible to unify the quarantine code in this respect, shortening the time of quarantine to not more than four weeks and in that way be able actually to enforce isolation, which at present is impossible. With adequate quarantine and early diagnosis, coupled with prophylactic vaccination of all exposed persons, the morbidity should be reduced very materially and with it the concomitant mortality. It should be possible ultimately to provide for the vaccination against whooping cough of all infants from the third to the sixth month of life. Our present knowledge suggests that such an immunity would last for about a year. This prophylactic vaccination could then be repeated yearly for the first three or four years, which represents the years in which practically the entire mortality of whooping cough occurs. These preliminary studies of nearly a thousand cases justify the further investigation of means of treating this serious infection of childhood. It is our hope to extend this work to the various local boards of health, hospitals and laboratories, with the ultimate expectation of securing a specific means of therapy for pertussis. By such a concerted attack, a thorough survey should be possible and much evidence accumulated which it is impossible to do from one small group. The roentgen-ray treatment of the disease, which has gained the confidence and support of both the laity and the medical profession to a large degree, offers a means to this end, as it is possible to secure cases for study in this way which it has not been possible to do previously.

For this reason we appeal to the medical profession for furtherance of this work. Whooping cough still occupies one of the chief positions in infant mortality figures. We feel that, by the roentgen-ray treatment of whooping cough, combined with vaccine, as well as the ordinary medicinal agents, we have gone a step forward. Our own part in this program is comparatively unimportant. Our chief function is to stir up curiosity and interest in whooping cough and to maintain that interest by constant effort. If we can do this, whooping cough will follow in the footsteps of most of other recognized infectious diseases, as diptheria, and now scarlet fever, have done.



On admission. On discharge.

Fig. 3.—Typical roentgenologic findings in three classes of pertussis on admission and on discharge.

SUMMARY AND CONCLUSIONS

An analysis of 850 cases of pertussis treated by roentgen ray proves that:

1. This means of therapy is of value in reducing the number and severity of the paroxysms and in shortening the course of the disease.
2. The majority of the cases (750) occur under 7 years of age.
3. Most of the patients (499) present themselves in the paroxysmal stage.
4. The greatest benefit occurs in the paroxysmal stage, and especially in the younger patients.
5. Early diagnosis can be established bacteriologically and by blood examination, as the disease is accompanied by an absolute and relative lymphocytosis in 80 per cent. of cases during the catarrhal stage.
6. Suitable vaccines made from organisms with an agglutination titer of 1 : 1,600 plus are effective prophylactically, and if given in sufficiently large and frequent doses are of value therapeutically, suggesting that immunization is quantitative.

These observations suggest that, by early diagnosis, adequate quarantine for the actual infective period can be required, with a concomitant decrease in the morbidity and mortality.

ABSTRACT OF DISCUSSION

Dr. I. A. Abt, Chicago: It is well worth while to consider any treatment that promises to help in the cure of whooping cough, because we recognize that this disease of infancy and childhood is attended by a high mortality. The statistics on this subject presented several years ago by Dr. J. L. Morse of Boston showed a high mortality from this disease. So far as age incidence is concerned, Dr. Smith showed that whooping cough may occur at any period and that it is frequently observed in new-born babies, during the first days of life, and that mortality from the disease is highest during young life. In regard to the etiology of the convulsions, he pointed out that they might depend on the presence of tetany or spasmophilia. It would be interesting to note in these patients with convulsions whether blood calcium was diminished as it commonly is in spasmophilia. It has been known for a long time, and it was pointed out early by Sigmund Freud, that encephalitis was an occasional complication of whooping cough, and that convulsions and paralyses were manifestations of this condition. Later on, Oppenheim reported cases of spinal cord hemorrhage with severe nervous manifestations. Cerebral hemorrhages may occur at times with accompanying convulsions. The author referred to a patient with an extremely high leukocyte count with marked lymphocytosis. We recently had a similar experience. A child was admitted to the hospital with a leukocytosis of 150,000 and about 75 per cent. of lymphocytes. The child was coughing slightly, though our first impression was that it was suffering from a lymphatic leukemia. Paroxysmal cough increased; the leukocyte count gradually fell; the lymphocytes diminished in number, and a clinical diagnosis of whooping cough was confirmed by the symptoms. The author has emphasized the value of roentgen-ray treatment. The various therapeutic agents recommended in the treatment of whooping cough have been so varied and so numerous that the average physician is skeptical when a new remedy is suggested. It has been recently reported that more than 400 remedies have been proposed for the treatment of whooping cough. Each one has been sanguinely recommended, though nearly all of them have fallen into disuse. I am not convinced as to the specific curative effect of the roentgen ray. It seems to help in some cases. In a number of cases it has utterly failed in our hands. It is reported that some patients show a sharp reaction after the use of the roentgen ray and after this improvement seems to take place. It is conceivable that the use of the roentgen ray may diminish newly formed lymphoid tissue and swollen lymph nodes about the trachea and bronchi, and in this way remove the effect of mechanical pressure on these structures. Possibly the paroxysms of coughing are diminished by the disappearance of newly formed lymphoid tissue. It has been suggested that neuropathic children are more severely affected by whooping cough than normal children. Many clinicians have found that suggestion and imitation increase the tendency to cough. The results from the use of vaccines in the treatment of whooping cough are not uniform. Occasionally a patient shows improvement, and perhaps as frequently no decided result is obtained. Certainly, it is not a specific remedy in the sense that it cures a majority of those affected. I agree with the author, however, that combined treatment with roentgen ray and vaccine should be employed early in the disease, because a certain number of patients are benefited.

Dr. Julius Hess, Chicago: The series of cases that I have had is very much smaller than those presented by Dr. Smith. The first group, summer and fall cases, numbered sixty-two, and the second, or winter, group, forty cases. I divided these two groups in this way because the results differed very decidedly. We classed as +++ striking results, with marked relief within a day or two of the last treatment; ++, considerable relief with amelioration of the more distressing symptoms during the course of or shortly after the treatments; +, questionable results, and 0, no results. In the summer and fall series of sixty-two cases, 43 per cent. resulted in striking improvement of the symptoms and could be classed as +++; 32 per cent. definite but less marked improvement, and 25 per cent. resulted in little or no change in condition of the children. In the winter group of forty cases, 25 per cent. showed striking improvement; 27.5 per cent., definite but less marked improvement, and 47.5 per cent., little or no change. The winter results, as a whole, were less striking than those of the summer and fall. Of the seventeen patients receiving vaccines, from three to five doses without improvement before the roentgen-ray treatment was started, there were six +++, four ++, one + and six showing no result after roentgen-ray treatment. In six cases in which vaccine was given, after failure of roentgen-ray treatment, there was no evident improvement which could be construed as related to the therapy. In pertussis complicated by pneumonia, six cases of nontuberculous pneumonia which came under treatment, marked general improvement with lessening of paroxysmal coughing followed the institution of roentgen-ray therapy. The number of exposures varied from one to three, and they were given at two and three day intervals when repeated. I think we are still in the early stages of this treatment, and that the general recommendation for this method of treatment to the general practitioner should be made with a good deal of thought. I think there is danger of atrophy of the thyroid or the thymus by irradiation, especially at short intervals; the thyroid should be well protected; I have never given treatments at less than five day intervals. We used a dosage of 4 milliamperes, with 2 mg. aluminum filter, 7 inch spark gap and 14 inch distance, with five minute exposures.

Dr. L. W. Smith, Boston: In regard to the origin of the convulsions, about which Dr. Abt comments, we have had no cases since we have had the question of latent tetany in mind, and have not had the opportunity, accordingly, to make any blood calcium determinations. We feel that this may be a factor in the production of convulsions. None of our cases have had evidence of any paralysis, which, when they occur, are usually due to cerebral hemorrhage. I think there is no doubt that the roentgen ray does, as Dr. Abt suggests, reduce the size of the tracheal lymph nodes. This has been seen in the lantern slides and has been commented on by the roentgenologists. In regard to the dosage, we have constantly used a tube distance of 28 inches rather than 14 inches, as Dr. Hess has, which cuts the total dosage approximately in half. The total of the four doses has been computed at rather less than half the erythema dose. We have protected the thyroid also in many of our cases, particularly at the outset, when we were experimenting with the dosage and were not sure of the effects of the treatment. The roentgen-ray treatment has definitely worked out well, not as a cure, but in relieving the spasms and reducing their number, and in that way reducing the mortality from the disease. There is apparently no uniformity of regulation with regard to *quarantine in the* various states. In some there is also local option with the health boards, some requiring two weeks, others as much as twelve. If we can accept scientific evidence as far as bacteriologic studies go, the infectious period is not as long as most local boards assert.

PHARYNGO-ESOPHAGEAL DIVERTICULA

DIAGNOSIS AND PREOPERATIVE MANAGEMENT *

PORTER P. VINSON, M.D.
ROCHESTER, MINN.

In 1840, Rokitansky described two types of diverticula of the esophagus, traction and pulsion, and Oekenomides, in 1882, added the traction-pulsion variety.

The traction diverticula are usually situated in the region of the left main bronchus, and caused by extension of inflammation from a mediastinal lymphadenitis. When healing occurs, contraction of scar tissue pulls out a portion of the wall of the esophagus and produces a small sacculation. This type of diverticulum is, as a rule, symptomless, but may give rise to mediastinal abscess with esophagobronchial fistula, or, if obstruction occurs in the esophagus distal to it, a pulsion force is added which may cause the formation of the traction-pulsion type of sacculation.[1] This inflammatory traction type is rather frequently seen at necropsy but is rarely recognized during life.

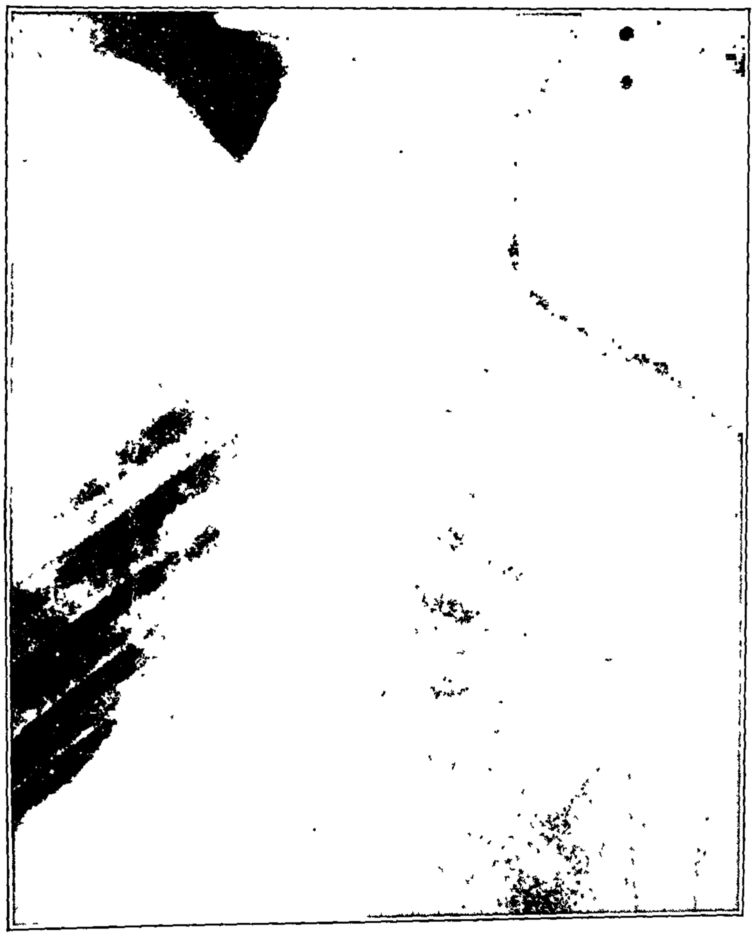


Fig. 1.—Pharyngo-esophageal diverticulum, showing pharynx outlined with barium.

When the pulsion type of diverticulum occurs in the lower portion of the esophagus just above the cardia, it may cause considerable discomfort; but, fortunately, this situation is very rare. The common site is in the lower pharynx just above the esophageal opening. Although termed pharyngo-esophageal, it is in reality a pharyngeal diverticulum (Fig. 1). It has been described by numerous authors and, although a relatively rare lesion, it has become so well known that many patients suffering from one of the more common types of esophageal obstruction are erroneously thought to have a diverticulum.

Since 1907, 112 diverticula of the esophagus have been observed at the Mayo Clinic. Two of these were considered the traction-pulsion type and were located at the bifurcation of the trachea; four of the pulsion type were located just above the cardia, and 106 were of the pharyngo-esophageal type.

Thirty-five diverticula of the pharyngo-esophageal type have been seen during the last two years, and they form the basis for this critical analysis. Thirty-one of the patients were males and four were females. The youngest was a woman, aged 42, and the oldest was also a woman, aged 83; the average age was 59 years.

SYMPTOMS

The symptoms depended largely on the size of the sac, being most severe in patients having large pouches. At the onset there was usually a sense of irritation in the throat, and an apparent increase of mucus. Then small particles of food lodged in the diverticulum, causing a feeling of obstruction high in the esophagus. With enlargement of the sac there was a very characteristic noise on swallowing liquids. An irritative cough was frequently noted, and the regurgitation of food and mucus at night seriously interfered with sleep. Regurgitation was so frequent immediately after meals that many patients made it a habit to wash out the sac after eating and before going to bed. The food regurgitated was usually that which had been taken at the beginning of the meal.

As the sac became larger, the opening into it came to lie in the same plane with the opening into the esophagus, and the weight of the retained food and secretions pulled on the esophageal aperture until it became a tiny slit, causing increasing dysphagia, so tha in a few cases there was complete obstruction to th passage of any type of food. This, of course, caused such marked loss of weight as to increase the hazards o treatment. Twenty patients had lost from 5 to 6 pounds (2.3 to 28.6 kg.) and had suffered a corresponding loss in strength.

A definite swelling in the neck when the sac wa filled with food was not a constant finding and could no be considered of much value in diagnosis. However, i the patient was given a drink of water and sudden deep pressure made on the left side of the neck, the water was forced back into the mouth and produced the same type of gurgling noise as was experienced on swallowing liquids.

Pains in the neck were a rare symptom.

The onset was insidious in all cases. Three of the patients had had an ordinary sore throat preceding the onset; one had had tonsillectomy a month previously; and one developed symptoms following a political speech. There was nothing in the histories of the other patients to suggest any etiologic factor. The duration of symptoms varied from four months in one case to sixteen years in two others, the average being five and one-half years. Occupation apparently had no influence on the production of the lesion.

DIAGNOSIS

The diagnosis can usually be made from the history and ordinary physical examination. Roentgenographic examination is of the greatest value in determining the size of the diverticulum. The passage of a blunt olive

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* From the Section on Medicine, Mayo Clinic.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Vinson, P. P.: Cardiospasm Associated with Esophageal Diverticula, New York M. J. **117**: 540 (May 2) 1923.

over a silk thread, as previously described by Plummer,[2] is absolute confirmatory evidence of sacculation (Fig. 2 *a*).

In differential diagnosis, all diseases producing obstruction high in the esophagus must be considered; but if examination is methodically carried out, errors should be rare. In one patient an epithelioma had developed in the sac and called for careful esophagoscopic examination, but in most cases, the esophagoscope was of very little value in diagnosis or treatment.

TREATMENT

Usually the sac should be removed surgically by the method described by C. H. Mayo,[3] Judd,[4] Bevan[5] and others. Operation was advised in all the cases except those in which the sac was so small that it was not giving sufficient trouble to warrant operation, or unless the infirmities of age contraindicated it.

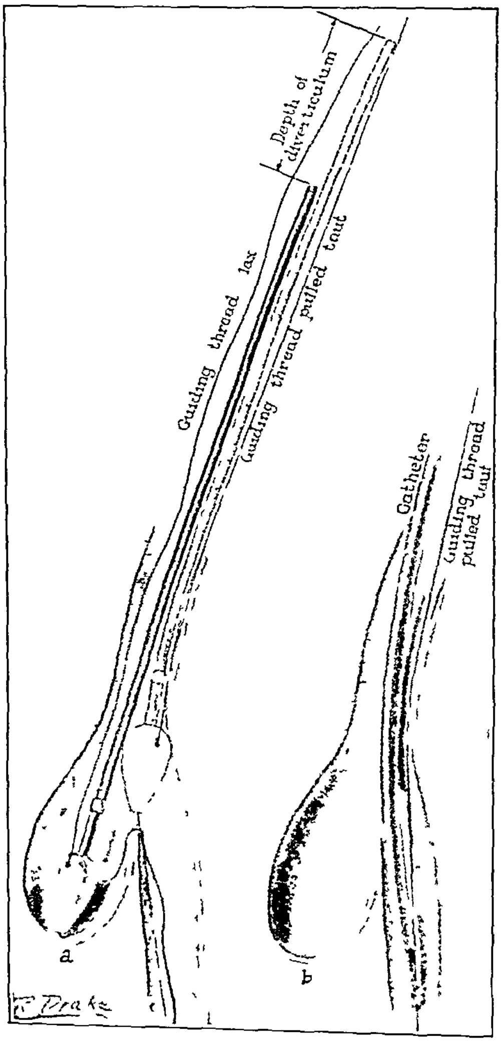

Fig 2—*a*, method of introducing sound into diverticulum sac and by drawing thread taut, determining the depth of the diverticulum, *b*, catheter introduced into the esophagus over a silk thread

In many cases in which operation was required, it was performed without any especial preparation; but when esophageal obstruction was nearly complete and the patient was weakened from lack of food, it was found that the passage of a catheter into the esophagus over a silk thread permitted the introduction of food into the stomach and markedly increased the vitality (Figs. 2 *b*, 3, 4 and 5). One of the patients gained 21 pounds (9.5 kg.) in five weeks, and another 29 pounds (13 kg.) in three months. This method of feeding is occasionally a life-saving measure, as the risk of a gastrostomy is almost as great as that attending immediate removal of the sac. In using this scheme of feeding, it is well to introduce through the catheter some of the salivary secretion contained in the sac, as this unquestionably aids digestion and hastens improvement of the patient. The catheter can either be left in the esophagus, or be introduced at each feeding. It is, of course, advisable for the patient to remain in the hospital; but if this is not possible, it is very easy to train a member of the family to pass the tube over the thread. Patients with very large sacs occasionally find it difficult to swallow a thread unless the pouch is first emptied. If the thread is taken with the sac empty and no fluids are taken for from four to six hours, the thread will pass into the stomach and intestine without difficulty and can be used as a guide in instrumentation.

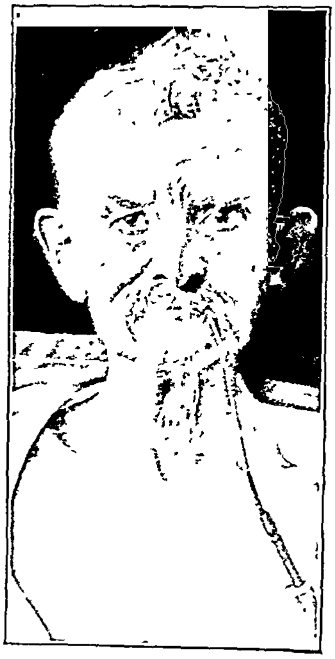

Fig 3—Patient with catheter introduced into the esophagus.

ABSTRACT OF DISCUSSION

DR. FRANK H. LAHEY, Boston: I have been very much interested in pharyngo-esophageal diverticula, particularly from the surgical point of view. All the cases that we have had have been referred to us by laryngologists. The operation in the past has had a bad name, owing to the fact that the one stage operation resulted in so many fatalities. The esophagus does not lend itself well to suturing, and by the one stage method of removal of the sac and suturing, leakage occurs and passes down along the tract into the mediastinum from which the diverticulum was removed, producing a mediastinitis that is practically always fatal. There are three stages of esophageal diverticula: the stage of irritation when the patient hawks and complains of a rough feeling in the throat, and raising a small amount of mucus; the stage in which there is more or less difficulty in swallowing, and the final stage—practically complete obstruction. The laryngologist has been able to help a great deal in this last stage by esophagoscopy, because when the diverticulum becomes large it drags down on the esophagus until the opening of the diverticulum is in the transverse position, while the opening of the esophagus is in the lateral position. By esophagoscopy a side opening has been demonstrated, and by dilating that the patient's condition has been improved a great deal in preparation for operation. The operation can be made practically safe by the two stage procedure, and patients are immediately relieved of the difficulty of swallowing because the axis of the diverticulum is pulled to the transverse position and the true opening of the esophagus is converted into a transverse one, so that the food goes directly into it There is one situation about which we have been very careful, and that is the tendency in removing the diverticula to take out too much of the esophagus. When we take out the diverticulum and begin to dissect the sac, if it has a very narrow neck it is easy to discriminate between the esophagus and the sac itself. On the other hand, if it has a broad opening into the esophagus, as is very common, it is easy to become overenthusiastic and dissect away too large a part of the esophagus, and then one narrows the esophagus by implanting a part of the esophagus rather than the neck of the sac into the skin on the neck in the two stage procedure. Probably the best explanation of the cause of pharyngo-esophageal diverticulum is that of neuromuscular incoordination of the cricopharyngeus fibers. The diverticulum occurs at the pharyngeal junction at a weak point in the middle line of the back wall of the esophagus at the level of the cricoid cartilage, and a majority of the cases go to the left side. In all probability, the same factors that produce diverticula in the beginning are present after the sac has been removed, and in following the cases postoperatively we have found that if dilation is not continued postoperatively, a further dilatation may occur and we have some cases now that are beginning, owing to failure to dilate postoperatively, to produce a slight secondary dilatation. Therefore, from our experience we would urge that not only should the diverticulum be removed by the two stage method, but the patient should return to the laryngologist for follow-up dilation in order that a recurrence, due to the persistence of the original condition which logically produces diverticula, may be overcome.

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[2] Plummer, H S: Diverticula of the Esophagus, with a Report of Six Cases, Northwest. Lancet **29**: 270 274, 1909

[3] Mayo, C H: Diagnosis and Surgical Treatment of Esophageal Diverticula: Report of Eight Cases, Ann Surg **51**: 812 817, 1910

[4] Judd, E S: Esophageal Diverticula, Surg, Gynec. & Obst **27**: 135 141 (Aug) 1918

[5] Bevan, A. D: Pulsion Diverticulum of the Esophagus: Cure by the Sippy Bevan Operation, Surg Clin Chicago **1**: 449 457 (June) 1917.

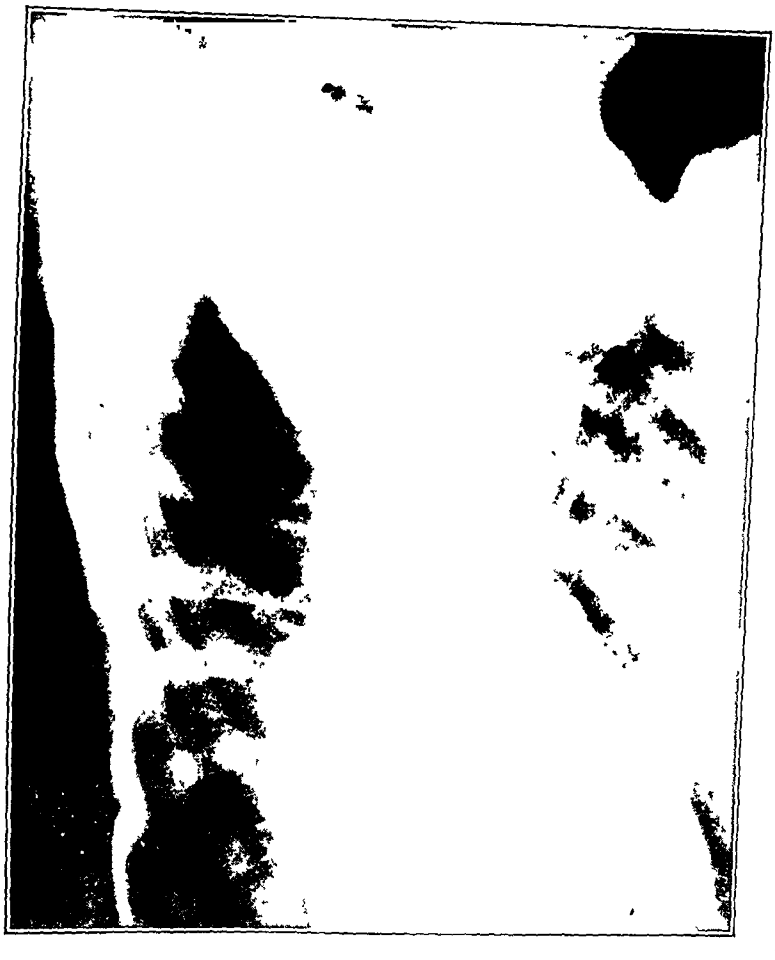

Fig. 4—Diverticulum in same patient as Figure 3

Dr. Chevalier Jackson, Philadelphia: Dr. Lahey's remarks are important. The chief factor in the etiology of diverticulum is the pinchcock action of the cricopharyngeal muscle. The pinchcock is always closed, except when it momentarily opens at the approach of the food or water in normal swallowing. When it fails to open, tremendous pressure is put on the walls, which causes a pouching at the weak point. It is not a weak point simply, but the extraordinary squeezing pressure put on the bolus by the oblique fibers of the inferior constrictor when advance of the bolus is resisted by the failure of the cricopharyngeal pinchcock to open. That puts extraordinary pressure on the weak point. An anatomic factor with an embryologic basis has been demonstrated by Mosher. Traction diverticulum is supposed not to cause symptoms because the lower orifice is lower than the upper, and consequently the sac empties itself readily. But the chief factor is that there is no cricopharyngeal pinchcock to produce obstruction ahead. I cannot agree with Dr. Vinson that the esophagus is not of use in the removal of a diverticulum. Da Costa, Gaub, Gibbon, Stewart, Shallow and other surgeons regard the esophagoscope as an invaluable aid at operation in locating and dissecting out the sac and in preventing the amputation of too much, as mentioned by Dr. Lahey. Dr. LeWald and other roentgenologists of experience can make a correct diagnosis in 95 per cent. of cases, but exclusion of malignancy and treatment of a strictured subdiverticular orifice require the esophagoscope. I cannot agree with Dr. Vinson as to the necessity of a string in the diagnosis of pharyngo-esophageal diverticulum. I think that instead of drawing an inference from the behavior of the string, it is better to make a diagnosis as one would in disease of the cervix, as one would in adenoids or in any other inaccessible region where one can put in a speculum and look at it. The esophagoscope is an esophageal speculum. To treat the esophagus without it is parallel to treating pelvic disease without a vaginal examination.

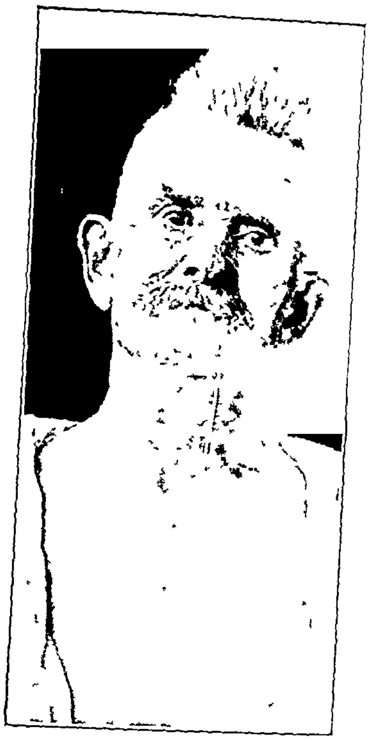

Fig. 5.—Same patient three months later. Patient had gained 29 pounds (13 kg.).

Dr. Samuel Iglauer, Cincinnati: By the string swallowing method it is much easier to find the pouch orifice than by simply introducing an esophagoscope. The tendency of the esophagoscope is to go into the pouch, and it is very difficult, at least in my experience, to introduce it past the pouch into the esophagus. If, however, the patient has swallowed a string, the esophagoscope is passed over the guiding string and then one has no difficulty in getting past the pouch into the lower esophagus. Another point is the one which has been suggested, that after operation dilation should be done to prevent recurrence. After operation there are so many adhesions that the esophagus has not its normal motility, and it is difficult to pass the esophagoscope. I think there is considerable danger of laceration or rupture of the esophagus after the patients have been operated on if one attempts to introduce that instrument. At least, it should be done with extreme care. In some cases it is impossible to get it past this adherent area in the esophagus.

Dr. Porter P. Vinson, Rochester, Minn.: Dilating these sacs, or rather dilating the esophageal opening before the removal of the diverticulum, as mentioned by Dr. Lahey, has not been very effective in my cases. As a matter of fact, there is no stricture of the esophagus; the weight of the large sac may make as much obstruction from pressure on the esophagus below the sac as at the opening itself. The passage of sounds in my experience has not given the patient relief. The sacs, of course, usually lie to the left side because the normal inclination of the cervical esophagus is toward the left. In the Mayo Clinic cases in which there was recurrence, there has been slight infection around the sac following operation. Dr. Jackson and I have never agreed on this thread proposition. I am grateful to him for his remarks, but we have found that in a diverticulum, or in any esophageal condition, the thread is of the greatest value as a guide in instrumentation.

RÔLE OF SURGERY IN THE TREATMENT OF PULMONARY SUPPURATION [†]

EVARTS A. GRAHAM, M.D.
ST. LOUIS

The same general principles of the treatment of pyogenic infections elsewhere apply equally well to those conditions of the lung. These are essentially (1) drainage, (2) obliteration of infected cavities and (3) extirpation of chronically inflamed tissue. The differences between suppurations of the lung and suppurations elsewhere consist chiefly in differences in the structure of the lung as compared with that of other organs. In this connection the lung should be regarded as a multilocular structure opening into a tube that leads to the outside of the body. Natural drainage, therefore, is usually through this tube and is often effective, leading to a spontaneous recovery. In many other cases, however, because of the multilocular nature of the lung parenchyma, many small abscesses occur which do not connect adequately with the natural drainage tube, and the result is therefore one of unsatisfactory drainage. The walls of the bronchi and bronchioles often become necrotic and dilated; and when the condition has become chronic the bronchi become thickened with fibrous tissue and their lumina become lined with granulation tissue, which bleeds easily. The condition of so-called bronchiectasis is then present, and single or multiple bronchiectatic cavities may be formed, which may give rise to chronic cough with intermittently foul and copious sputum, pulmonary hemorrhages, etc., symptoms that are too often regarded as being necessarily indicative of pulmonary tuberculosis.

There are various aids to the establishment of satisfactory drainage. The simplest of these is posture. If an abscess has already established communication with one of the larger bronchi, it is often amazing to witness the spectacular recovery that follows the improved drainage secured by placing the patient two or three times a day in the most advantageous position for the outflow of pus The bronchoscope serves likewise, in the hands of the skilled bronchoscopist, to promote drainage. It is of paramount value, however, in removing the essential cause of the abscess in those cases which follow the inspiration of a foreign body; for usually, at least in the relatively acute cases, the removal of the foreign body is followed by the prompt recovery from the abscess. Surgical drainage by an incision into the abscess accomplishes the most abundant drainage, but it is unnecessary in many cases, perhaps in the majority, when the fact is considered that probably only the larger abscesses are diagnosed.

One of the reasons for the rapid healing of acute abscesses in most of the soft tissues of the body is the fact that the walls of the abscess fall into apposition with each other after drainage has been established. For several reasons, however, the cavities formed by abscesses in the lungs do not become collapsed so readily. Because of this fact, the various methods of compression therapy, such as artificial pneumothorax and thoracoplasty, are logical procedures when their proper indications are present, because they induce the desired apposition of the walls of the suppurating cavities.

Finally, as a means of combating a chronic suppurative process of many years' standing, it was but natural to consider the desirability of the extirpation of the diseased tissue, a procedure found to be effective in chronic inflammations of the appendix, the gallbladder, etc. But, unfortunately, the ordinary method of resecting considerable portions of lung tissue has carried with it a prohibitive operative mortality. For example, the ordinary lobectomy in the published reports of forty-eight cases has been associated with an operative mortality of 52 per cent.[1] In order to perform the operation of lobectomy, it is necessary first to free the lung from the structures to which it has usually become adherent. This mobilization of the lung results in the creation of large raw surfaces no longer protected by their pleural coverings, and infection of these surfaces is a frequent sequel. It is not surprising, therefore, that the majority of the fatalities are due to mediastinitis and pericarditis.

One of the most difficult problems at present concerned with the treatment of all lung suppurations is the determination of the indications for any particular therapeutic procedure in a given case. It is even difficult in many cases to decide whether the treatment should be operative or not. For these reasons it is most desirable that these cases should be seen and discussed by a team experienced in the handling of such problems. The team should consist preferably of a surgeon, a medical chest man and a bronchoscopist. Each should have had special training in this kind of work, for this work has now become specialized. I do not mean that there are or should be specialists in lung suppuration in the same sense as the specialist in diseases of the eye or of the skin. But what I wish to imply is that the ordinary surgeon and the ordinary internist are not qualified to deal satisfactorily with these cases unless they have had special experience in this work. The surgery of the lung means vastly more than the purely technical features. The diagnosis is often extraordinarily difficult and the surgeon himself should be an adept in all the methods of making a diagnosis, including fluoroscopy and the interpretation of the roentgen-ray films. As in all other fields of medicine, there are a large number of helpful little tricks in arriving at a diagnosis which can be learned only by extensive experience in this sort of work. The need for specialized

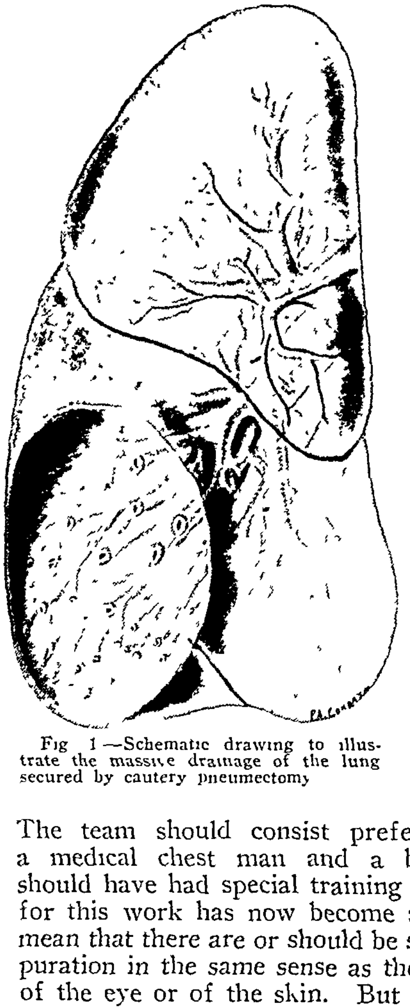

Fig 1—Schematic drawing to illustrate the massive drainage of the lung secured by cautery pneumectomy

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[*] From the Department of Surgery, Washington University School of Medicine and Barnes Hospital, St Louis

[†] Chairman's Address, read before the Section on Surgery, General and Abdominal, at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Graham, E A.: The Surgical Treatment of Bronchiectasis, Arch. Surg. 6: 321 (Jan) 1923.

study and training in this field has been reflected in the creation of the American Association for Thoracic Surgery, an organization which now, after six years, has nearly a hundred members composed of surgeons, internists, bronchoscopists and roentgenologists, all of whom, by combining their experience and by making a special study of the various problems involved, are attempting to bring order out of some of the chaos that exists.

As a result of combined experience, I believe that certain generalizations of treatment can be stated. For example, in the case of an acute abscess of the lung, the location of the abscess is a point of prime importance. If it is situated near the hilum and particularly if it has already established a partial communication with a bronchus, treatment by means of suitable posture or by the bronchoscope or by compression accomplished by artificial pneumothorax should be tried before resorting to surgical drainage by incision. In utilizing these measures, it is necessary to exercise the same care as in any other therapeutic procedure. Postural drainage, for example, is most effective when carried out on a specially constructed table which will permit the patient to be inclined at any desired angle. Bronchoscopic treatments should be conducted only by a skilled bronchoscopist because, at the hands of the unskilled, they may be very dangerous. The use of pneumothorax likewise should be undertaken with the utmost caution in order to avoid disasters. Singer and I, in our own work, seldom introduce more than 200 or 300 c.c. of air at the first sitting. If only enough air is introduced to cause a separation of the two pleural surfaces, the elastic tissue of the lung contracts sufficiently to produce an appreciable compression of the lung, if no adhesions are present. In this way it will be possible to avoid the disasters that sometimes occur from crowding of the mediastinal structures over against the opposite lung.

Fig. 2.—Aspiration of bronchial fistulas by suction machine after cautery pneumectomy.

If, however, these measures are not followed by prompt improvement, if pneumothorax treatment is impossible because of the presence of adhesions, or if the abscess is peripheral, surgical drainage is indicated, preferably by a two-stage method unless adhesions are definitely known to exist. By such a general plan of procedure, not only will many drainage operations be found unnecessary, but the total mortality will be much reduced. In an extensive review of the literature of lung abscess, Lockwood [2] showed that the average surgical mortality was 34.6 per cent. By carrying out the general plan just mentioned, however, our own mortality in the acute cases has been 22 per cent. In those cases in which an acute pulmonary abscess is associated with an empyema, our own experience indicates that it is better to drain the empyema first before attacking the lung itself. In the majority of instances of this kind, the abscess of the lung will heal spontaneously if only the empyema is drained, presumably because it has already established satisfactory drainage into the pleural cavity.

As is well known, a more difficult type of case to treat properly is that in which the condition has become chronic, extending often over a period of twenty years or more. In general, two types of chronic cases are seen, those in which the features of abscess predominate and those in which the chief characteristics are of bronchiectasis. A sharp differentiation, however, between these two types cannot be made satisfactorily because in every case of chronic abscess some bronchiectasis is probably present, and in every case of bronchiectasis there are usually multiple small abscesses. The natural course of these chronic cases, after a period of prolonged invalidism, is to end by death from a pulmonary hemorrhage, a cerebral embolism which usually results in an abscess of the brain, an extension of the suppurative pneumonia, or from the effects of amyloid degeneration of the viscera. The same general principles of treatment apply here as have been mentioned already in regard to the acute lung abscess; but each principle, when applied alone, has failed to relieve the symptoms in the majority of cases. Simple surgical drainage in such cases will usually drain only a small part of the diseased lung. Postural drainage, however, if systematically and persistently carried out, will occasionally result in amazing improvement, even if the condition has been present for years. Likewise, bronchoscopic drainage, when repeatedly performed, will often result in marked improvement. Moore [3] has given the results in the treatment of thirteen cases of lung suppuration at Jackson's bronchoscopic clinic; of this number, 25 per cent. are reported as cured, 42 per cent. as improved, and 33 per cent. as unimproved.

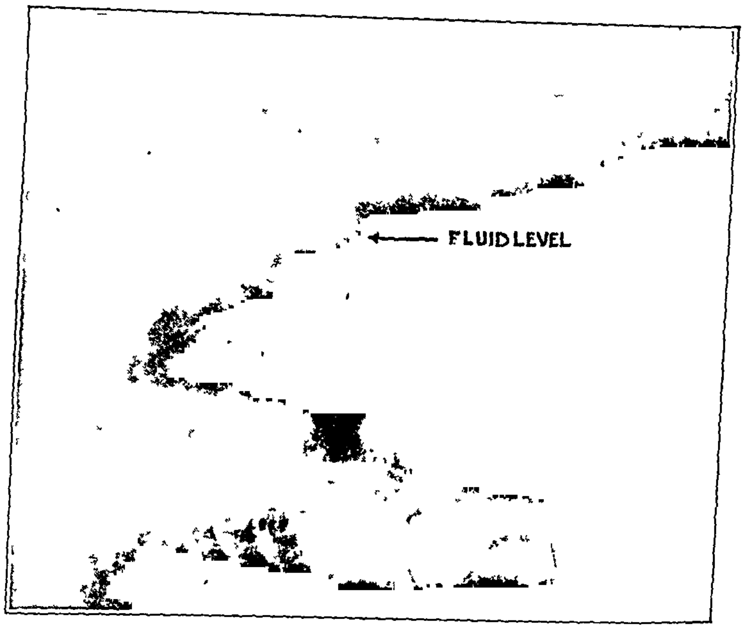

Fig 3.—Chronic abscess of lung found to be associated *with pulmonary tuberculosis* in a man, aged 62, successfully treated by cautery pneumectomy. Horizontal view *to show fluid* level.

Compression therapy also will be effective in some of the chronic cases. Singer and I have occasionally secured complete relief from symptoms after repeated pneumothorax treatments. Hedblom[4] has obtained excellent results in a series of ten cases of the bronchiectatic type of suppuration by graded extrapleural thoracoplasty; but in those of the type resembling chronic abscess, the results were not nearly so good.

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[2] Lockwood, A. L.: Abscess *of the Lung,* Surg., Gynec. & Obst. **35:** 461 (Oct.) 1922.

[3] Moore, W. F.: Bronchosopic Treatment of Suppurative Diseases of the Lungs, J. A. M. A. **82:** 1036 (March 29) 1924.

It is in these cases of chronic suppuration that resection of the diseased portion of the lung would seem to be the most useful procedure if it were not associated with so prohibitive a mortality even at the hands of an expert like Lilienthal. It occurred to us, however, that all the principles known to be effective in the treatment of the chronic suppurations could be combined in one procedure which, for want of a better name, we have called cautery pneumectomy. A detailed description of this operation has already been published.[5] Only certain features of it will be mentioned here. The operation consists, first, of an extensive exposure of the portion of the lung affected, which is usually obtained by the removal of three or four ribs for a distance of about 4 inches each. Then, without separating adhesions but, on the contrary, establishing them if none already exist, a large area is cauterized with an actual cautery. At first no attempt is made to burn away a large mass of lung. The idea is rather to establish numerous bronchial fistulas through which massive drainage may be accomplished. Compression over the diseased portion is obtained by tight bandaging and packing of the wound. At later stages, more and more lung can be burned away if necessary by increasing the depth of the cavity; but after providing for a few weeks such massive drainage as can be accomplished by the many bronchial fistulas, it frequently happens that much less lung tissue needs to be destroyed than was at first thought. In some cases, however, as many as six or eight cauterizations have been done. In my own experience in thirty-one cases of chronic pulmonary suppuration that have been treated in this manner, the problem of hemorrhage has not been a serious one. This is due chiefly to the fact that the blood pressure in the pulmonary artery is usually only about 20 or 25 mm. of mercury. Packing with gauze has always satisfactorily controlled any bleeding that has occurred. In this series only one death has occurred from hemorrhage. That was in a child whose hemorrhage occurred at night and was not recognized until too late. Judging from other experiences, the hemorrhage could have been easily controlled by packing if it had been recognized earlier.

The method, therefore, combines in one procedure all the known effective principles in the treatment of chronic lung suppuration; namely, drainage, compression and extirpation of the diseased tissue. In fact, it accomplishes each of these principles more effectively than other procedures. The drainage, for example, is copious because of the cross section of the bronchial tree and the creation of multiple bronchial fistulas; moreover, it is our custom to facilitate it by inserting an aspirating device into the open fistulas once a day or oftener as soon as the slough has separated from the wound. This is the principle of bronchoscopic drainage, but it can be more effectively carried out through the open bronchi than through the trachea. Likewise, compression of the affected portion of lung can be carried out more effectively and more precisely by this method than by pneumothorax or thoracoplasty, because the degree of pressure can be regulated simply by the amount of packing in the wound. Finally, as regards extirpation, since the lobe does not need to be mobilized there is no exposure of mediastinal pleura, pericardium, etc., to infection such as occurs in the case of the ordinary lobectomy. The chief factor in the operative mortality of lobectomy, suppurative mediastinitis, is therefore absent in this procedure. On the contrary, in the cautery pneumectomy an effort is made always to stay inside the lung tissue.

The method is applicable also not only to the cases of unilateral chronic lung suppuration but to the hitherto practically hopeless bilateral cases; and Singer and I used it successfully in one such case. We have used it also successfully in the removal of a portion of lung that not only contained a chronic abscess but was tuberculous[6] as well, in a man, aged 62, who, although completely incapacitated and bedridden for two years before his operation, is now at work again, free from symptoms, having gained 30 pounds (13.6 kg.). Likewise, it has been used, with at least temporary success, by Brun of San Francisco in two cases of primary carcinoma of the lung.

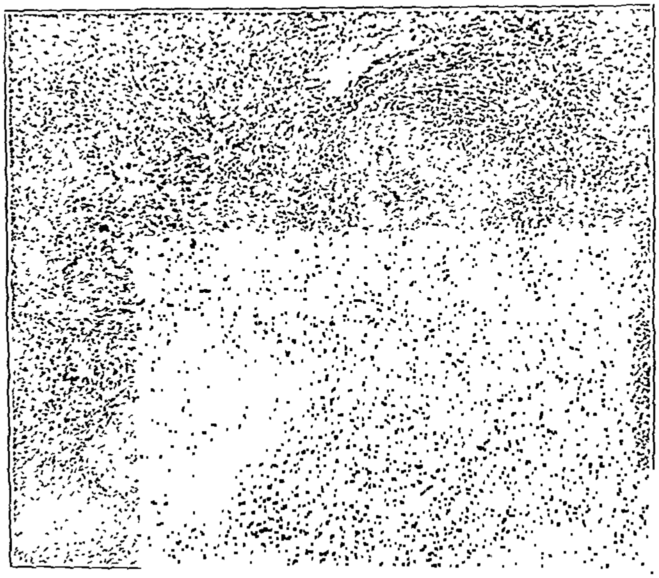

FIG. 4.—Section of fragment of lung removed at operation, showing undoubted evidence of tuberculosis.

Our results in treating thirty-one cases of chronic lung suppuration by this method are given in the accompanying table.

Results of Cautery Pneumectomy in Thirty-One Cases of Chronic Lung Suppuration

	Number	Per Cent.
Free from symptoms and completely healed............	6	19
Free from symptoms, but with remaining bronchial fistula	11	36
Marked improvement, but with some cough still present..	4	13.5
Recent cases still in hospital........................	2	6.5
Not heard from...	1	3
Dead	7	22

Of those patients who are classed in the table as "free from symptoms, but with remaining bronchial fistula," all are well except for the slight annoyance of the fistula. This merely necessitates the wearing of a small dressing over the fistulous opening, which is changed by the patient as often as desired. The secretion from it, as a rule, is about the same as that from the nose. In reality, 55 per cent. of the patients can be considered as well, and all who are not dead are greatly improved. A total of 74 per cent. are known to be either free from symptoms or improved. Seven deaths in a series of thirty-one cases would seem to be a high mortality. On the contrary, not only is it lower than with other operative procedures for this condition, but actually probably only one death in this series was due to the operation itself; namely, the case of hemorrhage mentioned above. Four of the seven deaths were due to cerebral complications, apparently embolism, and occurred in some instances several weeks after the last cauterization. This incidence of 12.9 per cent. of cerebral complications is the same as their spontaneous incidence in association with lung suppurations. As has been already noted by Tuffier,[7] for example, there is a spontaneous incidence of 13 per cent. of brain abscess in association with lung suppurations, regardless of whether or not any operation has been performed. In order, however, to minimize any possible liberation of septic emboli from the lung as a result of the operation, during the last few months we have been in the habit of passing deep massive ligatures of braided silk through the exposed lung tissue, which are tied before cauterization is begun. This procedure possibly also minimizes hemorrhage and encourages the destruction of more lung tissue. The other three deaths were found later to be associated with unrecognized abscesses in other viscera and the patients would not have been subjected to the cautery pneumectomy if the presence of the other abscesses had been known.

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[4] Hedblom, C. A.: Graded Extrapleural Thoracoplasty in the Treatment of Diffuse Unilateral Bronchiectasis, Arch. Surg. **8**: 394 (Jan.) 1924.

[5] Graham, E. A.: Cautery Pneumectomy for Chronic Suppuration of the Lung: A Report of Twenty Cases, Arch. Surg. **10**: 392 (Jan.) 1925.

[6] The tuberculosis was discovered accidentally after having the lung exposed, and was confirmed by microscopic examination of removed fragments. The sputum examinations had failed to reveal tubercle bacilli. It is not intended to advocate this procedure in the treatment of tuberculosis, but only to cite this case as illustrating the possibility of the successful eradication of tuberculous tissue from the lung in this way.

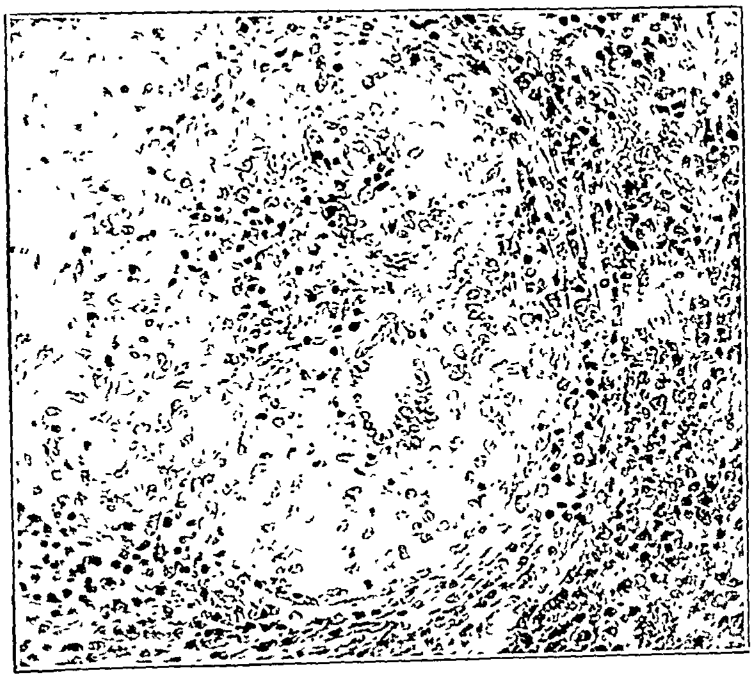

Fig. 5.—Higher magnification of same section.

There are various auxiliary measures which we have found to be of great assistance. Of these, one of the most important is the clearing up of any suppuration in the nasal sinuses. There is unquestionably an intimate relationship which often occurs between chronic nasal and chronic pulmonary suppuration. Another procedure of importance is the administration of arsphenamin in those cases accompanied by a spirochetosis. Although the spirochete often found in the pus from these cases has nothing to do with the spirochete of syphilis, it nevertheless is usually effectively combated by arsphenamin. Heliotherapy is of great value, and it should be carried out systematically in all cases. Generous diet and maintenance of the nutrition of the patient are likewise important.

SUMMARY

Many patients with pulmonary suppuration will recover without surgical intervention. The surgical indications at present are not clearly established. Pneumothorax, bronchoscopy, etc., are very useful but have their limitations. In the chronic cases the operation of cautery pneumectomy combines in one procedure all the principles known to be effective. This method has also been used successfully in a case of localized pulmonary tuberculosis in a man, aged, 62, although of course it is not intended to advocate this procedure as a method of treatment of pulmonary tuberculosis. It has also proved itself effective in bilateral chronic suppuration.

PUNCTURE OF THE CISTERNA MAGNA

A SUMMARY OF FIVE YEARS' EXPERIENCE *

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Since Wegeforth, Ayer and Essick,[1] in the early part of 1919, worked out the anatomic relationships of the cisterna cerebellomedullaris, and Ayer,[2] in 1920, made his first report of the clinical use of puncture of the cisterna magna, this procedure has grown of increasing importance from the diagnostic as well as the therapeutic point of view.

One cannot help but feel that this operation has not reached the internists, pediatricians and general practitioners for whom it should be of the greatest clinical importance in the early treatment of diseases, especially epidemic cerebrospinal meningitis. The main drawback is that it has been considered a procedure for specialists. This fact limited its employment to a comparatively small group, mainly neurologists and neuropsychiatrists who have made careful studies of the cadaver as emphasized by Ayer in all his reports. However, with the extension of graduate courses and demonstration clinics, knowledge of the value and method of the operation should be made available for all physicians, especially for the internists and general practitioners who make the diagnoses of meningitic infections first and who see the cases early, before they are brought to the attention of the specialist. A knowledge concerning this procedure and special indications for early intracistern administration of serum would result in further profitable cooperation between the internists, general practitioners and neurologists. It, in fact, can be performed with safety by any physician who can perform lumbar puncture, and who has done many cistern punctures on the cadaver.

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[7] Tuffier, quoted by Sauerbruch, F.: Chirurgie der Brustorgane, Berlin, Julius Springer 1: 569, 1920.

* From the Philadelphia General Hospital and the Colorado Psychopathic Hospital, University of Colorado.

[1] Wegeforth, Paul; Ayer, J. B., and Essick, C. R.: The Method of Obtaining Cerebrospinal Fluid by Puncture of the Cisterna Magna, Am. J. M. Sc. 157: 789 (June) 1919.

[2] Ayer, J. B.: Puncture of the Cisterna Magna, Arch. Neurol. & Psychiat. 4: 529 (Nov.) 1920.

Since Ayer's papers have been presented, his method and technic for puncture of the cisterna magna have not been improved, and owing to his unusually careful research and description of the landmarks, there is little likelihood of there ever being any substantial change in his original description. Therefore, for information regarding the technic and method of puncture of cisterna magna, one refers directly to his original articles. I wish, however, to review my experience with this procedure, and this is desirable since occasionally one encounters considerable skepticism regarding the clinical application and usefulness of puncture of the cisterna magna.

During the last five years, I have performed approximately 1,550 punctures of the cisterna magna in a total of 190 patients. No serious accidents have occurred in this group of patients. In fact, from the standpoint of safety, it compares favorably with a similar number of lumbar punctures performed. In one case (tuberculous meningitis) in which the cisterna magna had been distorted by blockage, a small vein from the spinal plexus was perforated.[3] However, little hemorrhage resulted and the vein thrombosed, as was proved by necropsy a week later. In another case of terminal cerebrospinal meningitis in which treatment was started late, death occurred shortly after administration of intracistern injection of serum. Since pulmonary edema was really advanced at the time of treatment, it was realized by all attending physicians that this was a measure of last resort to help the patient, and death certainly could not be attributed to the operation. The facility of this operation is an important indication for its use. In another puncture performed by an inexperienced intern on a moribund patient with tuberculosis meningitis, the perforation of a posterior spinal vein resulted in a hemorrhage which surrounded the entire medulla, shown in the accompanying illustration, a striking lesson of the danger and necessity for caution regarding the technic of this puncture. Forty other cases were examined post mortem with no evidence of any pathologic changes. One of these patients had had twenty-six intracistern injections. The clinical indications for puncture of the cisterna magna are: (1) therapeutic; (2) diagnostic; (3) prophylactic. My experiences may be thus summarized:

A. Therapeutic use of cistern puncture:
   1. Injection of arsphenaminized and tryparsamidized serum in treatment of general paresis: 1,340 punctures for a total of 110 patients; greatest number of treatments in any one case, twenty-six.
   2. Treatment of acute epidemic cerebromeningitis. Number of cases, eight (advanced type). Recoveries, five. Number of injections, thirty-two; average of 20 c.c. per injection. Treatment consisted of alternate injections of serum in the cisterna magna and the lumbar region.
   3. Treatment of tetanus. One case; two treatments did not save patient.
   4. Therapeutic drainage. Fifty-four punctures, twenty patients. Combined puncture with irrigation of modified Ringer's solution. Two cases, three punctures. Traumatic meningitis. Tuberculous meningitis.

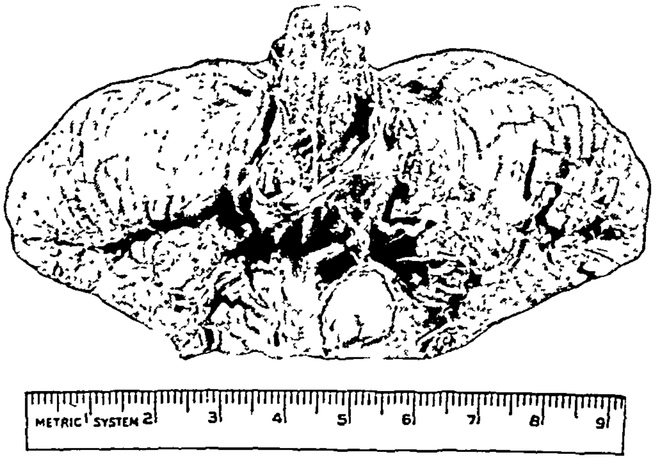
B. Diagnostic use of cistern puncture:
   1. Diagnosis of subarachnoid block (combined puncture). Fifteen cases; seven showed definite findings of spinal block which were all verified by operation or necropsy. Total punctures, twenty.
   2. Localization of spinal cord tumors through use of lipiodol. Three cases, three punctures.
   3. Localization of site of hemorrhage. Four cases; one mistake in diagnosis.
   4. Cistern puncture done when lumbar puncture was impossible; twenty-seven cases.

C. Prophylactic use of cistern puncture:
   Prevents possibility of block following meningitis.

THERAPEUTIC INDICATIONS

The chief clinical use of cistern puncture is found in the injection of antimeningitic serum in the treatment of epidemic cerebrospinal meningitis. Since the cisterna magna, as pointed out by Ayer, has the strategic position as the distributing center of the spinal fluid to both the cerebral subarachnoid space and the spinal subarachnoid space, injection of serum at this site is clearly indicated, especially since meningitis is in the beginning a cerebral infection. Therefore, the injection of serum near the site of disease in maximum concentration should result in a much better therapeutic result and dissemination than serum injected in the lumbar subdural space.

The injection of India ink in quantities of 20 c.c. in the lumbar region results in little staining at the base of the brain. The injection of ink in the cisterna magna results in a uniform straining of the cerebral subarachnoid space. The evidence, therefore, is that in treatment by the cistern route the serum is more widely spread and is under maximum concentration nearer the site of the disease than when the lumbar puncture method is used alone. Since one has a generalized meningeal infection to deal with, it is advisable to treat both the upper and the lower cerebrospinal fluid reservoirs. I have preferred alternate intracistern and lumbar injections of serum. The result in the eight cases indicates the advisability of this procedure. This treatment will be referred to later as one that should possibly prevent the possibility of spinal subarachnoid block.



Hemorrhage surrounding entire medulla and pons following cistern puncture on a moribund patient with tuberculous meningitis.

I have used the intracistern approach in treatment of meningitis in eight cases, all of which were of advanced type. Five of these patients recovered entirely.

The intracistern route is also employed for the injection of arsphenaminized serum according to the Swift-Ellis technic in the treatment of neurosyphilis. Unfortunately, this procedure was very discouraging in my hands [4] and has been discontinued.

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[3] Ebaugh, F. G., and Patten, C. A.: Tuberculous Meningitis, Arch. Neurol. & Psychiat. 11: 707-710 (June) 1924.

[4] Ebaugh, F. G.: The Treatment of General Paresis by the Intracistern Route, Arch. Neurol. & Psychiat. 7: 325 (March) 1922.

Its use in cases of traumatic meningeal infections, combined with lumbar puncture for irrigation with modified Ringer's solution, offers an additional therapeutic indication for puncture of the cisterna magna.

This route was used in one case in the treatment of tetanus. Observers disagree, however, regarding the advisability of intraspinal treatment of this disease.

DIAGNOSTIC INDICATIONS

The main diagnostic indications are: (1) for the diagnosis of spinal subarachnoid block such as frequently follows acute epidemic cerebral spinal meningitis; (2) for the diagnosis of cord compression from any cause, especially spinal cord tumors; (3) for accurate localization of spinal cord tumor following the injection of lipiodol[5] and roentgenographic studies, and (4) for the localization of sites of hemorrhage.

The diagnosis of these conditions requires combined lumbar and cistern punctures. For instance, in seven cases the findings with combined puncture indicated cord compression, caused by a tumor. The use of combined puncture led to a definite diagnosis of cord compression, and was, therefore, the final diagnostic procedure showing advisability of an early operation. Often if this procedure had been performed many months sooner, the same definite diagnosis of cord compression could have probably been made. The importance of increase in cerebrospinal pressure, after occluding the jugulars, is well demonstrated in these studies, as well as the hydrodynamic and hydrostatic tests originally described by Ayer.

The third indication for puncture of the cisterna magna, which I have termed prophylactic, constitutes a very obvious use for this clinical procedure; i. e., that puncture of the cisterna magna can be used to prevent the possibility of spinal subarachnoid block following acute cerebromeningitis, especially if alternate injections of serum by the intracistern and lumbar route are employed. I feel that by this method, all areas, both the cerebral subarachnoid space and the spinal subarachnoid space, will be treated with continued maximum concentration of serum, and that the possibility of subarachnoid block will be prevented.

Since I have not had a great opportunity to try out this procedure, this indication is given mainly to suggest this routine treatment of epidemic cerebrospinal meningitis, so that resulting subarachnoid block may be obliterated.

The five recovery cases mentioned, despite the fact that all patients were in extremely critical condition on admission to the hospital, suggest that the use of combined lumbar and intracistern injections of serum is practical and efficacious from a therapeutic standpoint.

The clinical usefulness of puncture of the cisterna magna would seem to justify further exploitation among the internists, pediatricians and general practitioners, who could thereby see that their cases are treated early with this method. Extension courses are necessary to further knowledge and to do away with the slight skepticism that may be present regarding this operation.

4200 East Ninth Avenue.

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[5] Ebaugh, F. G.: The Use of Lipiodol in the Localization of Spinal Lesions, Am. J. M. Sc., June, 1925.

Goiter and Iodin.—Although the immediate cause of endemic goiter, so far as the individual is concerned, may be that iodin sufficient for proper metabolism is for some reason not obtained, this does not eliminate the necessity for theories as to the causation of endemic goiter.—Blacklock.

FLACCID PARAPLEGIA*

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AND
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Our object is to report two cases of flaccid paraplegia of rather unusual origin.

Flaccid paraplegia is a flaccid paralysis of two corresponding extremities, and is the antithesis of spastic paraplegia. It may result from many causes, of which the most common are: (1) section of the cord from direct trauma, such as bullet and stab wounds; (2) compression as a result of fracture, dislocation, spondylithiasis, extramedullary neoplasm or hemorrhage; (3) infections, such as tuberculosis, syphilis, poliomyelitis, malaria, septic meningomyelitis and abscess; (4) simple degeneration or myelomalacia, accompanying diseases of the hematopoietic system and thrombosis; (5) exogenous toxins, such as lead and alcohol; (6) unknown etiology, such as Landry's disease, and (7) congenital defects, such as abiotrophy and intrauterine paralyses.

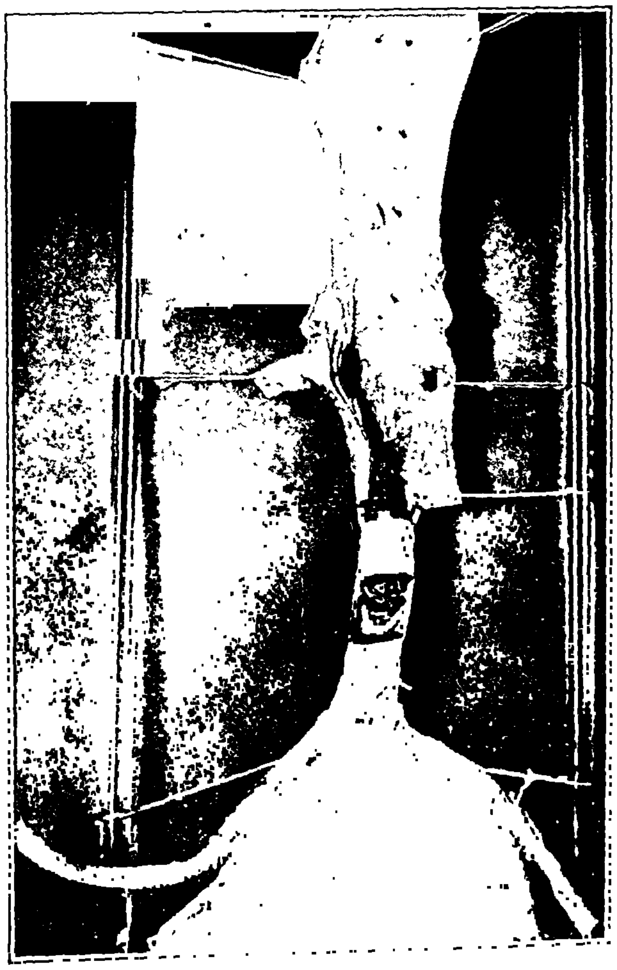

Fig. 1.—Thrombosed aorta.

The symptoms of flaccid paraplegia are: (1) paralysis; (2) loss of reflexes; (3) flaccidity; (4) atrophy; (5) vasomotor disturbances, and (6) sensory disturbances.

The following two cases are sufficiently unusual to warrant recording:

Case 1.—A pedler, aged 40, Russian, married, entered the City Hospital of New York, Dec. 25, 1924, complaining of difficulty in breathing and of pains in the chest. He smoked to excess, but did not use alcohol and there was no history of syphilis. The history failed to disclose any previous illnesses. On admission his temperature was 101.4; pulse, 120, and respiration, 30.

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* Read before the Section on Nervous and Mental Diseases at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

The physical examination showed that he was suffering from acute bronchitis, acute pharyngitis and bronchopneumonia. The pupils were small and irregular, and reacted slowly to light. The throat was red, with whitish gray patches extending from the left side of the uvula to the upper pole of the right tonsil. They were membranous in appearance and so adherent that they could not be removed. The submaxillary nodes were palpable. There was no thyroid enlargement. The heart was rapid but otherwise normal. The spleen was not felt, and the liver did not extend below the ribs. The knee jerks were active and equal. There was no Babinski reflex and no clonus. The examination of the lungs showed roughened breath sounds and moist râles throughout both sides of the chest. In other words, the medical examiner concluded that this patient was suffering from acute bronchitis, acute pharyngitis, and early bronchopneumonia. The patches in the throat so resembled diptheritic lesions that the patient was immediately given 12,000 units of dipththeria antitoxin.

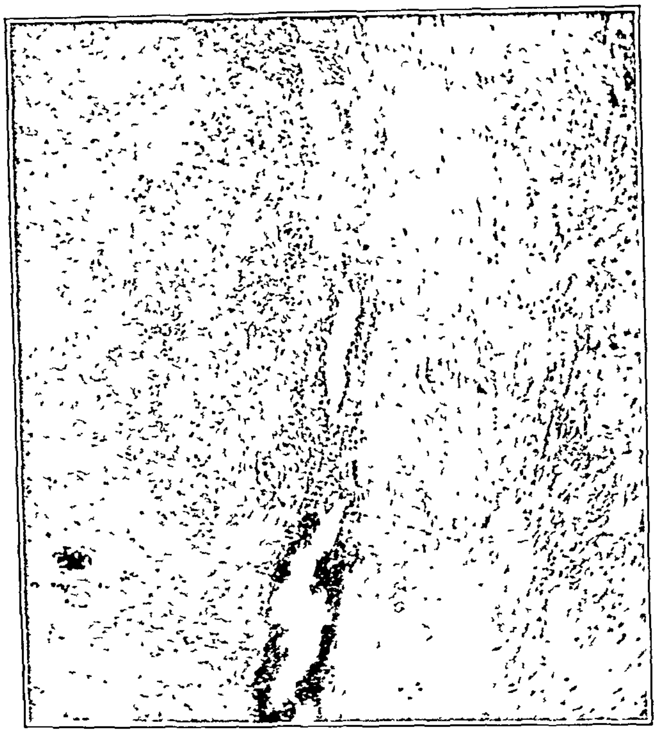

Fig 2.—Thrombus, at left, and wall of aorta, at right as seen under low power; between them are two small channels containing blood; hematoxylin eosin stain.

December 26, he became delirious. December 27, frank signs of patchy consolidation appeared at the bases of both lungs and there followed a straightforward attack of bronchopneumonia. The pneumonia gradually cleared up, the membrane on the throat disappeared, and the redness of the throat subsided.

The chemical examination of the blood was negative. The blood count showed 22,000 white cells, 95 per cent. polymorphonuclears and a normal red cell count. The urine was negative. The sputum was negative for tubercle bacilli. The Klebs-Loeffler bacillus was not found. A lumbar puncture showed a clear fluid under normal pressure with no globulin, a small amount of albumin, twelve cells and a normal colloidal gold curve

About two weeks later, the patient was much better. The temperature was subnormal and the chest was clear. A new complication appeared two days later when he complained that his feet were painful and that his legs from the knees down were numb and cold. At this time the knee jerks were absent. Another spinal puncture was negative The blood Wassermann reaction also was negative, so that the idea of neurosyphilis was rejected. A week later the patient sat up and appeared to be convalescing, although he still complained of pain in his feet and numbness and coldness in his legs. After sitting up for several days, some atrophy of the leg muscles developed. He was unable to stand without assistance. The knee jerks were still absent, the abdominal reflexes were absent, but the pain in the legs had disappeared. It was then decided to have a neurologic consultation.

The neurologic examination showed that he was unable to walk, owing to a paralysis of both legs. The knee jerks were absent. There was a double foot drop, slight atrophy of both legs, and distinct vasomotor changes. He presented a typical flaccid paraplegia.

Soon after, the patient again complained of severe pains of a burning character in both feet. He was then transferred to the neurologic service. The course of the case for the next ten days was uneventful and he seemed to present the typical course of a peripheral neuritis.

February 16, the condition became very unsatisfactory. The symptoms were unimproved and the general condition was worse. The temperature rose and the patient became delirious. He developed hallucinations and confusion. It was evident that some complication had occurred and that the original diagnosis was wrong. The white blood cell count was 13,000, with a polymorphonuclear count of 92 per cent., and there was a reappearance of the physical signs of bronchopneumonia. We concluded that this was a recrudescence. He was again kept in bed and treated for this pneumonia.

About February 21, a marked cyanosis of the fingers, ears and legs developed. A small area of dry gangrene about 6 cm. in diameter appeared over the external malleolus of the left leg. February 23, similar areas of gangrene appeared over both knee caps. He died that night.

The postmortem examination disclosed a thrombosis of the abdominal aorta beginning about 5 cm. above the bifurcation of the common iliacs and extending downward into the femoral on the right and just to the femoral on the left. The thrombus was reddish white, firm and well organized. From gross examination it appeared to obstruct completely the lumen of the aorta, both common iliacs and their external and *internal* branches.

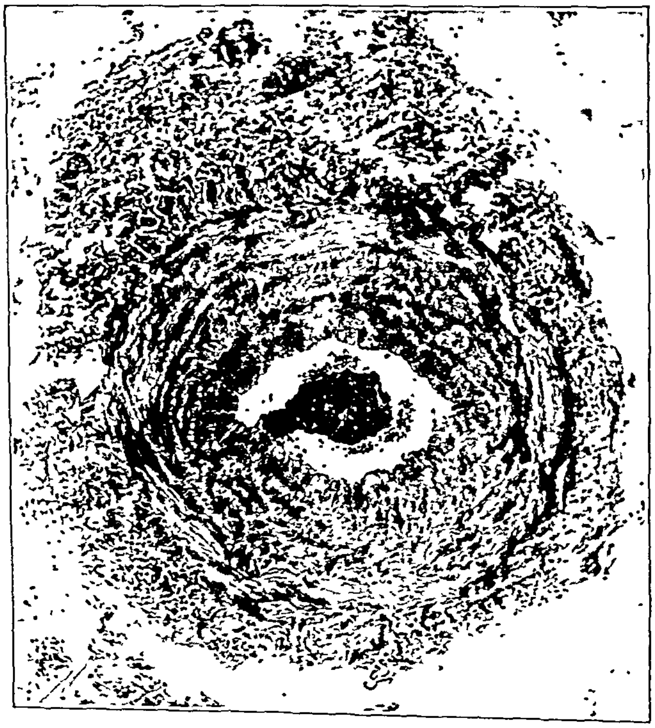

Fig 3.—Branch of the dorsalis pedis with blood in the lumen, as seen under low power; atherosclerotic changes in vessel wall, with fragmentation of the elastic lamina, hematoxylin eosin stain.

The other gross anatomic diagnoses were bronchopneumonia, chronic fibrous pleuritis and fibrinous peritonitis; chronic perihepatitis and perisplenitis; healed apical pulmonary tuberculosis, and arteriosclerosis of the aorta.

From the gross appearance of the thrombosed portion of the aorta and its branches, it appeared that the occlusion was complete. If this were true, the absence of more extensive gangrene required explanation. The microscopic examination furnished it. There was not complete obstruction to the circulation. In certain portions there was complete union between the thrombus and the intima of the aorta; in other portions there were small channels between the margin of the thrombus and the intima of the aorta containing blood. The dorsalis pedis and its branches also contained a moderate amount of blood. This small amount of circulation undoubtedly accounted for the absence of more extensive gangrene.

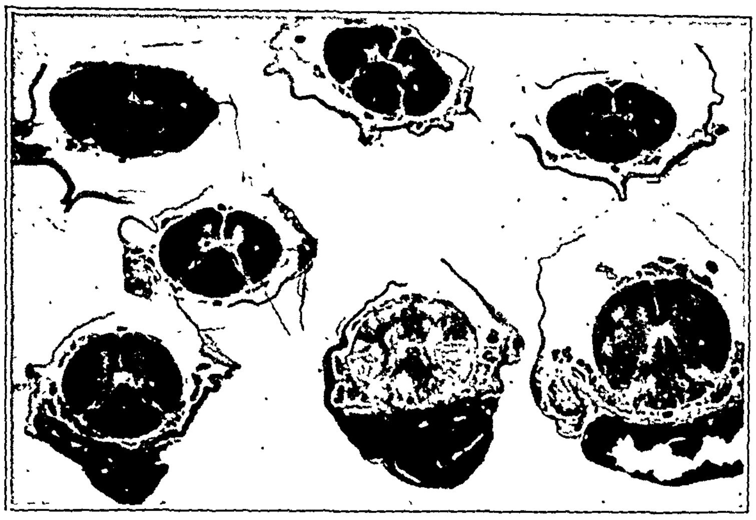

Fig. 4.—Cord sections at different levels; extradural hemorrhage in lower dorsal and upper lumbar segments, with demyelinization; Weigert-Pal stain.

The thrombus began as a mural one at a point where the intima had been damaged, therefore predisposing to this occurrence. Its growth was gradual and at no time was the circulation entirely cut off. The lower portion of the aorta was the seat of advanced atheromatous degeneration, with some areas of erosion of the intima with deposits of lime salts in the media.

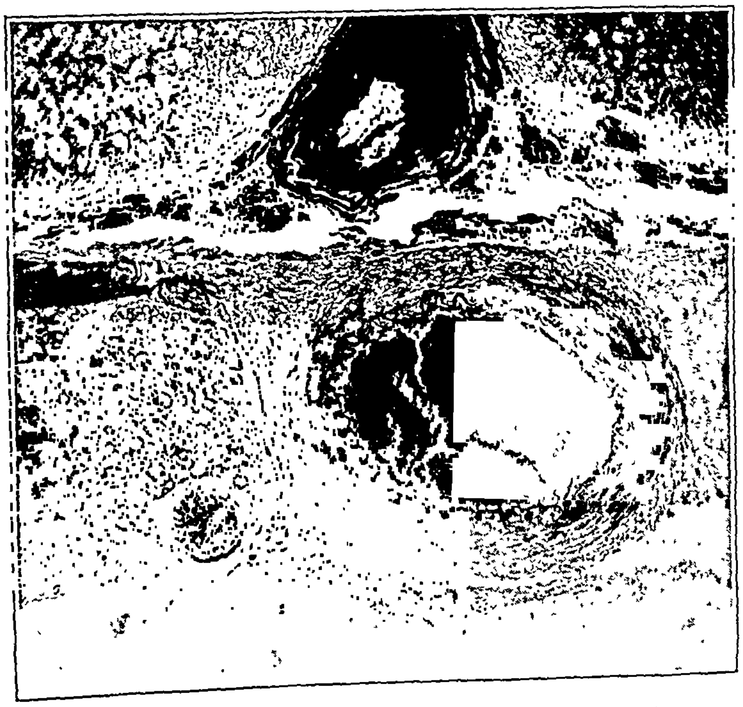

Fig. 5.—Thrombosis of anterior spinal artery at ventral fissure, as seen under low power.

Case 2.—A housewife, aged 71, for four years had suffered with persistent pain in the right hip. This occasionally extended down the thigh and had been diagnosed as arthritis. One evening while undressing, she had an unusually severe pain in the abdomen and right hip and at once became very weak in both legs. Two days later she was brought to the hospital.

The neurologic examination showed, as in Case 1, complete motor paralysis of both legs with flaccidity. The knee jerks were absent. There was a beginning atrophy of the musculature of both legs. A sensory examination revealed complete anesthesia to all types of sensation from the hips down. The feet were in a position of complete extension, and there were slight vasomotor changes. In addition to these symptoms, the patient rapidly developed incontinence of both sphincters. In other words, she presented a typical flaccid paraplegia. In three days she contracted pneumonia, and nine days after admission she died.

The necropsy revealed a large extradural hemorrhage confined to the lower dorsal and lumbar region of the spinal cord but most extensive over the dorsal surface. The dorsal and ventral spinal arteries and veins were thrombosed, as were also many of the small pial vessels on the lateral surfaces. When the cord in the lower dorsal region was sectioned, degeneration of the lateral and dorsal columns could be detected grossly. The other gross anatomic diagnoses were bilateral lobular pneumonia, ascending urinary infection, chronic passive congestion of the liver, senile atrophy of the spleen, chronic interstitial pancreatitis, polyps of the cervix uteri, general arteriosclerosis, and chronic myocarditis.

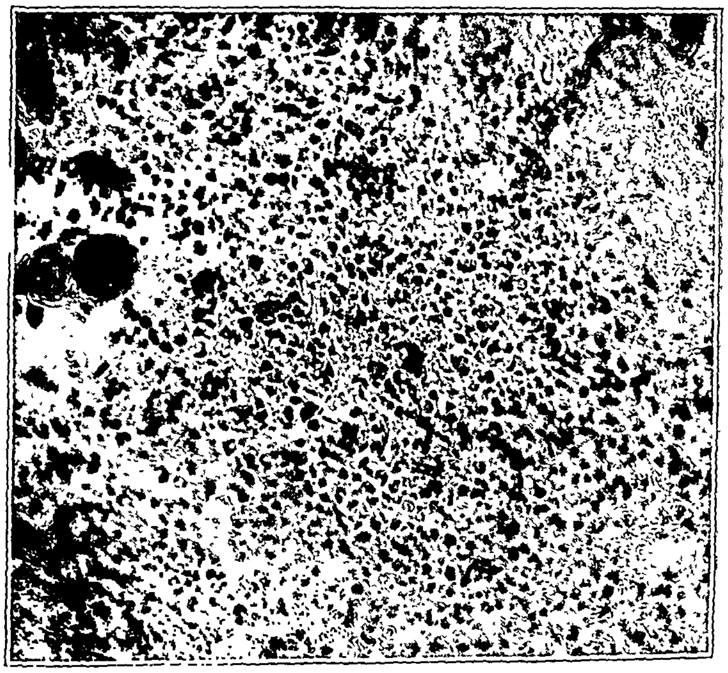

Fig. 6.—Ventral horn of spinal cord in lower dorsal region, showing glia cells containing fat (gitter cells); low power; Marchi stain.

Microscopic examination of the cord showed an extreme variability in the central canal. In the cervical region it was patent, and the ependymal cells had a regular arrangement quite similar to that seen in infants. In the upper dorsal region the lumen was obliterated, but in the mid-dorsal region it again became patent. The hemorrhage had dissected upward to approximately the mid-dorsal region. Both the pachymeninges and the leptomeninges were thickened, more so on the dorsal than on the ventral surface of the cord. Many of the pial arteries and the veins, more especially at the dorsal sulcus and the ventral fissure, were thrombotic. Just below the mid-dorsal region of the cord there was an increase in the ependymal cells. They were heaped up in several layers, and small cell groups of from three to six cells could be seen completely detached from the area around the obliterated central canal. Some of these groups had a rosette arrangement resembling the cell grouping seen in gliomas.

In the lower dorsal region, the gray matter was the seat of an intense reaction on the part of the glial elements involving all four horns. At first glance the pathologic sections gave the impression of an epithelial tumor. The cells varied greatly in size. Some were small, with pyknotic nuclei. Others were large and vesicular, with two or more nuclei. The nuclei of the small cells were round and deeply stained. Other cells possessed large oval, polyhedral and kidney shaped nuclei. Some of the nuclei were central in location and others eccentrically placed. The staining reactions of the nuclei likewise showed considerable variability, some being deeply stained and containing a fairly dense chromatin network, whereas others were hypochromatic There was an increased vascularity in both the gray and the white matter. Small, thin-walled capillaries were especially abundant in the gray matter.

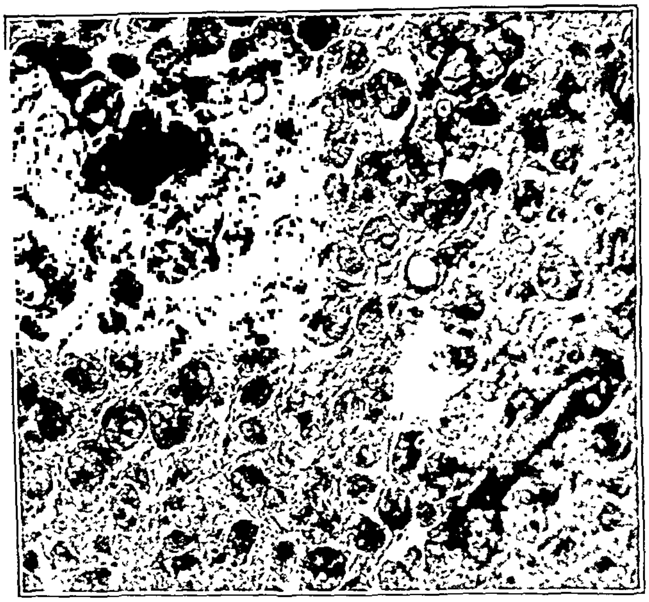

Fig. 7.—Portion of a ventral horn of the spinal cord in the lower dorsal region, showing large glia cells laden with lipoidal and fat droplets; high power; Marchi counterstained with phosphomolybdic acid hematoxylin.

The ganglion cells of the ventral horns were absent in the lower dorsal and upper lumbar regions, and in adjacent segments above and below this level showed various degenerative changes. Many of the cells that remained were swollen and devoid of tigroid except around the periphery of the cell (central chromatolysis). Some of the ganglion cells were nearly filled with fat. The nuclei of many cells were eccentric, and the dendrites were short and stubby (atrophy). In others, both the nuclei and the tigroid had disappeared entirely, and the cells were small and elongated.

Marchi stains demonstrated that the glia cells contained fat, thereby identifying the process as a reaction secondary to the ischemic degeneration.

In the immediate vicinity of the hemorrhage there was almost complete demyelinization of the white matter, except in the juxtagriseal zones of the dorsal, lateral and ventral columns. The white matter had a honeycombed appearance, but there was practically no ascending or descending degeneration. The changes in the white matter were not accompanied by inflammatory reaction but were similar to those seen in myelomalacia. Large fat granular glia cells were scattered through the demyelinized areas.

This represents a case of extensive softening and degeneration of the spinal cord following an extradural hemorrhage. The hemorrhage induced mechanically a thrombosis of the vessels that furnish the blood supply to the cord, the resultant pathologic change being one of ischemic softening.

As would be expected from the extensive degeneration of the gray cornua and white columns of the cord, the clinical picture was that of complete flaccid paralysis, complete anesthesia to all types of sensation below the level of the lesion, bladder and rectal incontinence, and atrophy of the musculature of the lower extremities.

41 East Sixty-third Street—55 East Seventy-sixth Street.

Clinical Notes, Suggestions, and New Instruments

ANEURYSM OF THE AXILLARY ARTERY *

J. S. HORSLEY, JR., M.D., RICHMOND, VA.

Aneurysms of neither traumatic nor syphilitic origin are unusual. The case here reported is an aneurysm originating from an infected embolus. Reports of such cases are seldom encountered in current medical literature.

REPORT OF CASE

Miss B. W., aged 23, entered St. Elizabeth's Hospital, March 25, 1924, complaining of a "tumor under the right arm." Her family history and past history were irrelevant. Seven weeks before admission to the hospital, an aching pain began in the right arm. A few days later, the fingers began to feel numb. The numbness gradually spread up the arm. Accompanying this was a paralysis of the fingers of the right hand, and a weakness of the entire right forearm and arm. Four weeks previous to admission, the patient's mother first noticed a round tumor in the right axilla. This mass was about the size of a hickory nut, and was tender on pressure. It gradually increased in size, and decreased in tenderness. Aside from a slight general weakness on exertion, and a questionable history of a mild degree of fever for a short time preceding coming to the hospital, the patient noticed no other symptoms. There was no history of syphilis or trauma.

The patient was moderately pale, small, and poorly nourished. The pulse rate was 120 a minute; temperature, 101.8 F., and respirations, 28 a minute. A smooth, oval, slightly tender and moderately firm mass presented along the anterior fold of the right axilla (Fig. 1). It had an expansive type of pulsation, a definite to-and-fro murmur could be heard over it, and a thrill was perceptible along its proximal border. The muscles about the right shoulder were atrophied, and there was paralysis of practically the entire right upper extremity.

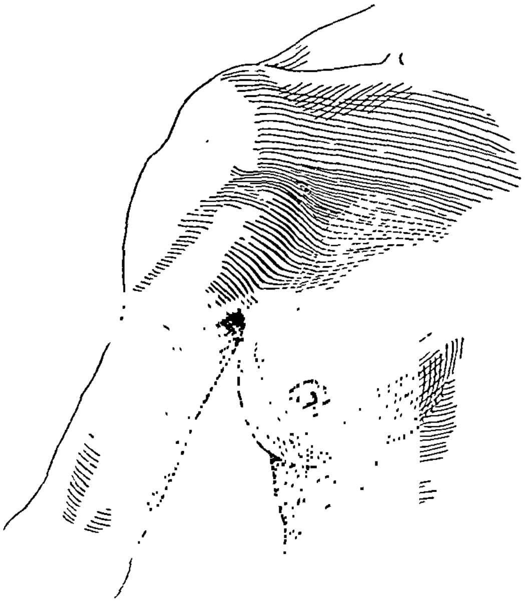

Fig. 1.—External appearance of aneurysm of right axillary artery.

All sensation (touch, pain, temperature, etc.) was lost over the area distal to the tumor, except for moderate impairment over the medial surface of the arm and the dorsum of the hand. Pulsation of all the vessels distal to the tumor was absent.

The cardiac apex impulse was in the fifth intercostal space, about 11 cm. from the midline, and dulness extended to about 8 cm. in the fourth intercostal space. There was a visible,

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* From the Surgical Department of St. Elizabeth's Hospital.

* Read before the Junior Clinical Club, Richmond, Va., April 7, 1924.

diffuse, precordial pulsation, and no thrill. The first sound at the apex was of good muscular quality. There were harsh systolic and diastolic murmurs, which could be heard at all auscultatory areas, loudest at the mitral and aortic areas, and transmitted to the neck and axilla. The pulse rate was 120 a minute, regular in force and rhythm. The blood pressure was 113 systolic and 40 diastolic in the left arm, and absent in the right.

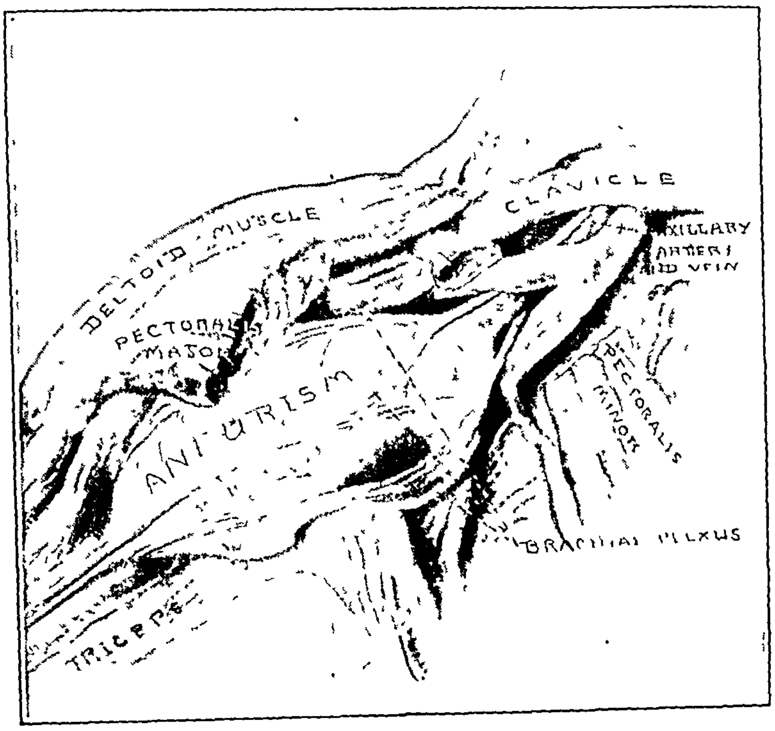

Fig. 2.—Appearance at necropsy of aneurysm of right axillary artery. The marked stretching and flattening out of the nerves of the brachial plexus which surround the aneurysm sack may be noted.

The rest of the physical examination was negative except for a scoliosis and a moderate vaginal discharge, which showed many diplococci, staphylococci, long chained streptococci and large bacilli, but no gonococci. Roentgenologic examination of the right shoulder and arm showed no pathologic changes in the bones. The white blood count on admission was 11,240, with 77 per cent. neutrophils, and two days later was 18,400, and 86 per cent. neutrophils. The blood Wassermann reaction was negative, and a blood culture showed diplococci and short chained, nonhemolytic streptococci.

A diagnosis of septic endocarditis, nonhemolytic streptococcic septicemia, and aneurysm of the right axillary artery was made.

The temperature ranged between 100 and 102 F., and the pulse remained about 120. Three days after entrance the patient had a sudden pain across her forehead and became unconscious. There was profuse perspiration, though no further paralysis. Consciousness was regained in ten minutes. Four hours later a second attack of unconsciousness ensued, from which she recovered only partially, several hours later. A diagnosis of cerebral embolism was made.

On account of the positive blood cultures and her critical condition, 20.5 c.c. of a freshly made 1 per cent. solution of mercurochrome-220 soluble (equivalent to 5 mg. per kilogram of body weight) was given intravenously, with practically no subsequent reaction. Within eight hours the temperature was normal and remained so for thirty-six hours. Blood cultures taken the day following the injection were reported negative by the bacteriologic laboratory of the Richmond Health Bureau, and doubtfully positive after forty-eight hours' growth by our laboratory. Forty-eight hours after the first injection, the temperature rose again to about 101 F., and a second intravenous injection of 20.5 c.c. of a freshly made 1 per cent. solution of mercurochrome-220 soluble was given. During the following twenty-four hours, there was a moderate reaction consisting chiefly of a slight diarrhea. There was only a very small drop in the temperature and temporary improvement. Blood cultures were negative the day after injection. Five daily intravenous injections of sodium cacodylate (0.2 gm.) were also given.

On the seventh day in the hospital the pulse became more rapid, irregular and weak, the respirations more labored, and the patient died.

A postmortem examination limited only to the aneurysm was consented to by the patient's family. About 5 cm. from the clavicle, the axillary artery seemed to have "blown out." The nerves of the distal portion of the brachial plexus were very much compressed and stretched out by the aneurysmal sac, giving ample explanation for the paralysis and loss of sensation in the right upper extremity (Fig. 2). The wall of the aneurysm was disintegrating and very thin, and most of it was filled with blood clots. On the distal side the artery was occluded with an old thrombus, which seemed partially organized.

COMMENT

This case presents three interesting features:

1. A very unusual type of aneurysm of the right axillary artery, the development of which was apparently caused by both the mechanical and the infectious factors produced by a septic embolus complicating a septic endocarditis.

2. The rather uncommon condition of septic endocarditis with positive blood cultures showing short chained, nonhemolytic streptococci, and the development of a fatal cerebral embolism.

3. The apparent benefit of the intravenous use of mercurochrome-220 soluble in streptococcic septicemia.

617 West Grace Street.

A PORTABLE OXYGEN TENT*

Alvan L. Barach, M.D., and Carl A. L. Binger, M.D.,
New York

In recent years the therapeutic use of oxygen has undergone a new trial. Effective methods of administration have been introduced, and a study of the changes in the oxygen content of the arterial blood during treatment has been made. The results indicate that the adequate employment of oxygen in conditions of acute anoxemia is generally followed by clinical improvement, and that an abnormally low arterial oxygen saturation is usually restored to, or near to, the normal value. In no report in which oxygen has been effectively administered is a contrary view upheld. Opinions based on expe-

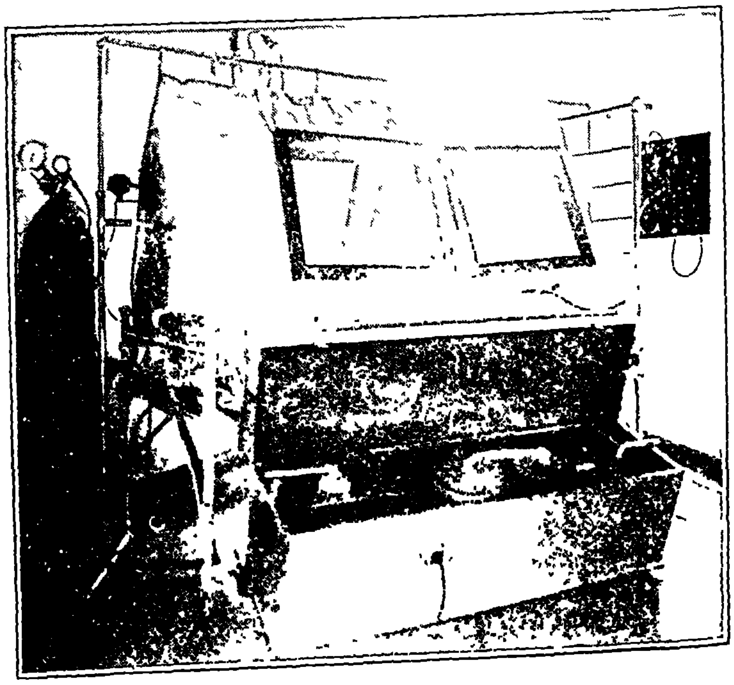

Fig. 1.—Portable oxygen tent.

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* From the Department of Medicine, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital, and the Hospital of the Rockefeller Institute for Medical Research.

riences with ineffective methods are no longer germane to effective oxygen treatment.

Haldane[1] says: "In the light of present knowledge it is childish to suppose that as soon as anoxemia is relieved a patient will recover, or that anoxemia is itself a trifling matter if life is not immediately imperiled. If there were only one clinical lesson derived from a perusal of this book, I hope it would be that anoxemia is a very serious condition, the continuance of which ought to be prevented if at all possible." Additional information is needed to determine more precisely the value of oxygen therapy. This is especially true of pneumonia, in which oxygen want is a frequent occurrence. We have devised an additional apparatus designed to meet certain desirable conditions not heretofore fulfilled.

There have already been reported various types of apparatus by which oxygen may be effectively administered. For effective oxygen therapy the inhaled air must contain between 30 and 60 per cent. of oxygen, preferably in most cases between 40 and 50 per cent. Methods that accomplish this are those described by Meltzer,[2] Haldane,[3] Barach[4] and Henderson.[5] In these methods a mask or mouthpiece or, more recently, a nose piece[6] is used for purposes of administration. The oxygen chambers as developed by Barcroft,[7] Poulton,[8] Stadie[9] and Binger[10] represent methods in which continuous oxygen inhalation is naturally accomplished with the additional advantage of precise regulation of the desired oxygen concentration and unhampered nursing facilities. The bed tent of Leonard Hill[11] represented an attempt to reproduce certain of these advantages. Recently, Roth[12] has advised a head tent which seems excellently adapted to meet the requirements for effective oxygen treatment.

The apparatus here reported provides continuous oxygen therapy by enclosing the patient in a relatively air tight compartment containing an increased concentration of oxygen. It satisfies the following requirements:

1. Regulation of the precise oxygen concentration desired.
2. Adequate removal of carbon dioxid, moisture and heat.
3. Ease of installation.
4. Ease of operation to include the maintenance of a constant oxygen concentration, the removal of carbon dioxid, heat and moisture, and the use of simplified methods for determining the oxygen and carbon dioxid concentrations.
5. Ease of access to the patient on the part of nurses.
6. Portability so that it may readily be set up in a private residence.
7. Absence of any restraints on the patient in the form of appliances to his face or body.
8. A small utilization of oxygen.

With these principles in mind, a small oxygen chamber was constructed to surround the patient in bed. It consists of a simple pitched roof tent of the inverted V type, with the bottom open and with a horizontal flange around its base 1 foot wide. There is a sheet of the same material having the same measurements as the periphery of the flange on the tent. The tent is suspended over the bed, with the patient in bed, from an aluminum frame, the horizontal sheet having previously been laid under the mattress. The flange of the tent and the sheet are then rolled together and held by means of clamps to make a tight closure. The patient is thus simply and quickly enclosed in a relatively air-tight compartment 6½ feet long, 3 feet wide and 4 feet high at the center. The material is a rubberized fabric specially constructed with three-ply layers of cotton cemented by rubber tissue. Its permeability for hydrogen is 11 liters per square meter for each twenty-four hours; for oxygen, about half as great.

On each side of the tent are two glass windows, 2½ feet long and 2 feet wide. These windows are set in wooden frames, fastened by appropriate screw clamps, and may be taken off in about ten seconds. Ready access to the patient is thus afforded for the giving of nourishment, for clinical observation and for treatment. When a larger opening is desired, the clamps at the side are pulled off and the flap is lifted, a process that takes no more than a minute. If it is desired to have complete access to the patient, the clamps on all four sides may be removed and the tent pushed to the side of the room in three or four minutes. There is still another opening near the head end, 1 foot in diameter, and surrounded by a sleeve of the fabric 1½ feet long, designed to admit the attendant's hand.

The ventilation of the tent is accomplished by an external closed circuit which provides an oxygen rich atmosphere freed from carbon dioxid, heat and excess moisture. Besides this there is a small fan in the tent to keep the air in motion. The motor that drives this fan is, of course, outside the tent. Air circulation is maintained by a positive pressure blower driven by a motor of one-sixth horse power, which is capable of delivering 150 liters a minute. The circulating air is passed through two copper canisters, the first containing soda-lime to remove carbon dioxid, and the second anhydrous calcium chlorid to remove moisture. It is then run through a copper cooling coil, from which it is conducted by 1 inch corrugated rubberized tubing to the foot end of the tent. As it passes into the tent, a small inlet tube admits oxygen. At the head end of the tent, a 1 inch outlet is provided which returns the air to the blower. Projecting into the tent through the foot end is a small fan. This fan is propelled on a 10-inch shaft by a small motor outside the tent. The purpose of this fan is to assure adequate air motion within the tent.

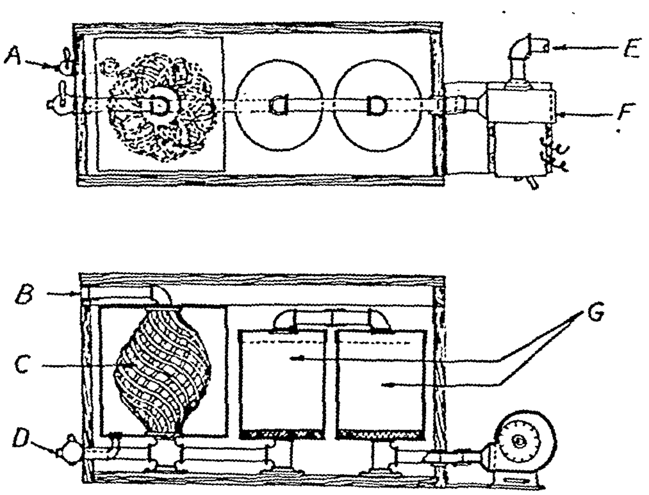

Fig. 2.—Power unit for oxygen tent: *A*, tank drain cock; *B*, outlet to tent; *C*, cooling coil; *D*, pipe drain cock; *E*, inlet from tent; *F*, motor blower; *G*, soda-lime cans.

Both motors are completely removed from contact with the tent atmosphere, so that no sparks can arise in the oxygen rich mixture. The soda-lime and calcium chlorid canisters are each 12 inches high and 10 inches in diameter. The lids of both may be easily removed for inspection and refilling. Ten pounds (one can) of soda-lime lasts for two days of continuous use, and one can of calcium chlorid for from one to two days.

The cooling coil consists of twelve small one-fourth inch pipes placed in a copper tank containing either ice water or a salt ice freezing mixture. In the former instance, air may enter the cooling coil at from 20 to 25 C., and leave at from 3 to 5 C.; in the latter, it may leave at —5 C. The tent material radiates little heat, so that most of the cooling is accomplished through the coil, which keeps the temperature inside equal to the temperature of the room. On cold days with the windows of the room open, ice is sufficient to cool the inside atmosphere, but on warmer days an aluminum plate is used to replace one of the glass window panes. This makes for freer radiation of heat. It is desirable to keep the room in which the chamber is placed quite cold, thus relieving the cooling coil of excessive work. A thermometer is suspended at one window to record variations in temperature. With warm outside atmospheres, the difficulties of cooling increase. We have not used it in hot weather, and believe it unpractical under these circumstances without additional cooling facilities.

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[1] Haldane, J. S.: Respiration, New Haven, Yale University Press, 1922, p. 160.

[2] Meltzer, S. J.: The Therapeutic Value of Oral Rhythmic Insufflation of Oxygen, J. A. M. A. **69**: 1150 (Oct. 6) 1917.

[3] Haldane, J. S.: Brit. M. J. **1**: 181 (Feb. 10) 1917.

[4] Barach, A. L.: A Simple Apparatus for Administering Oxygen, J. A. M. A. **78**: 334 (Feb. 4) 1922.

[5] Henderson, Yandell; and Haggard, H. W.: The Treatment of Carbon Monoxid Asphyxia by Means of Oxygen + CO_2 Inhalation, J. A. M. A. **79**: 1137 (Sept. 30) 1922.

[6] Barach has added a glass nose piece to the rebreathing apparatus to be used as occasion indicates in place of the mouthpiece. The nose piece appears to be the most comfortable of all the appliances heretofore used.

[7] Barcroft, J.; Hunt, G. H., and Dufton, Dorothy: Quart. J. Med. **13**: 179 (Jan.) 1920.

[8] Poulton, C. P.: Personal communication to one of the authors (C. A. L. B.).

[9] Stadie, W. C.: J. Exper. Med. **35**: 323 (March) 1922.

[10] Binger, C. A. L.: Med. Hosp. **24**: 186, 1925.

[11] Hill, Leonard: Proc. Physiol. Soc. **1**: 20, 1921.

[12] Roth, P.: Bull. Battle Creek Sanit. & Hosp. Clin. **19**: 178, 1924.

The framework can be taken apart and rolled up into 3-foot lengths. With the windows removed, the tent is easily folded. The entire apparatus may thus be transported, and can be used in any private house supplied with electricity.

Oxygen is supplied in high pressure tanks, fitted with a reducing valve and gage calibrated to deliver oxygen in liters per minute. The tank contains 220 cubic feet under 2,000 pounds pressure, and lasts approximately one day of continuous oxygen therapy.

The analyses for oxygen and carbon dioxid have been greatly simplified by Binger. The details are described by him in an article[10] on the oxygen chamber now in use at the Rockefeller Institute. Both tests are easily learned and may be quickly performed. The escape from complicated gas analysis which these simple methods make possible is of great value in promoting the practical usage of this apparatus. The necessary equipment for the tests can be mounted at the head of the bed or kept on a table near by.

In order to render the apparatus transportable, a case has been constructed, shown in diagram and picture, which contains the soda-lime and calcium chlorid canisters, the cooling coil, motor and blower. The case is lined with felt to eliminate the noise of the motor.

The leakage of the tent is quite small. In fifteen hours, with the motor not running, the oxygen concentration fell from 50 to 40 per cent. With the motor running and a patient in the tent, 1 liter a minute sufficed to keep the oxygen concentration constant. The concentration may be raised from 29 to 40 per cent. by running in oxygen at the rate of 10 liters a minute for forty minutes. Opening a window for two minutes reduced the oxygen from 40 to 35 per cent. It was then brought back to 40 per cent. by running in oxygen at 10 liters for ten minutes.

The cost in oxygen is about $3 daily, in soda-lime and calcium chlorid, $5, making a combined cost of $8 a day. This is often less than the cost of oxygen when supplied by low pressure oxygen tanks in ordinary methods of oxygen treatment carried over the same period of time.

The procedure in beginning treatment may be briefly described: The ventilating outfit, compactly arranged in the case, is placed under the bed after the soda-lime and calcium chlorid canisters have been filled. The frame is set up by adjusting the telescope rods to a suitable height and length. The tent is then suspended to the hooks placed at 12-inch lengths along the horizontal bar. The window panes are not in place at this stage of the adjustment. One side of the tent is then lifted over the patient, and the process of rolling the flanged edges with the sheet is begun. The inlet and outlet tubes from the tent are now connected to the ventilating system by corrugated tubing, and the air circulation set in operation by starting the motor. The fan is also started and the window panes are placed in position. Oxygen is delivered at 10 liters a minute for forty minutes, which usually suffices to raise the concentration of oxygen to 40 per cent. The carbon dioxid percentage may be allowed to vary between 0.03 and 1 per cent., although in our experience it has never been above 0.6 per cent. and rarely above 0.3 per cent. The ventilation is ample to keep it at 0.3 per cent. The oxygen and carbon dioxid concentrations are tested every hour.

SUMMARY

The oxygen tent here described has the advantages of a small portable oxygen chamber, enclosing the entire patient in bed. Oxygen therapy may be accomplished with precise regulation of the oxygen concentration desired, and with adequate removal of carbon dioxid, moisture and heat. It is relatively simple in operation and may be transported to any hospital or private residence where electricity is available.

41 East Seventieth Street.

Special Article

REPORT OF COMMITTEE ON HEREDITARY BLINDNESS *

The main question now before this committee is what form of a law can be proposed that will prove the most practicable and efficient to lessen the continued propagation of hereditary blindness.

But for the sake of clearness, and especially for those who have not given particular attention to the subject, it is desirable to consider briefly the reason for suggesting any such legislation at all. Apparently only three methods for prevention have been suggested. The first of these, namely, operations for sterilization, although the most effective, and much safer than is generally supposed, would certainly arouse opposition at present. The next, separation of man and wife, is impracticable. Finally, legislation, although difficult to obtain, is nevertheless the only method that as yet gives hope for any prevention.

In advocating this, we have also found that legislators are slow to be moved by scientific or even by philanthropic considerations, and the quickest way of attracting their attention is by "touching the pocket nerve"; for, as they are elected to stand as guardians of the public purse, it is natural for them to demand, and incumbent on any one asking for still further legal restrictions to show, that at least one advantage would be economy to the taxpayer.

That would be even easier than now to prove, if only a little attention were paid to a recommendation made in the last report of this committee. That was, in substance, that superintendents of schools for the blind, students of genetics and of economics in our universities, physicians in general and particularly members of this section of the American Medical Association take the trouble to investigate and record the number and cost to the community, directly and indirectly, of families in which any form of blindness is hereditary. Naturally that is a slow, tedious work to which few are inclined and for which still fewer have time. Nevertheless, still more data are gradually accumulating.

Fortunately, or perhaps it should be said unfortunately, there is abundant evidence already to show that some effort should be made to prevent further waste of dollars, to say nothing of the cruel and needless wrecking of human hopes or lives. Sad examples of inherited defects are familiar to every physician—especially to those who treat diseases of the eye. The testimony in an abundant literature shows clearly that heredity is one of the most important problems with which the practitioner has to deal.

Various estimates thus far made by students of this question have placed the number of those blind in the United States from hereditary causes as from about 75,000 to 100,000, and their annual cost directly and indirectly at something more than $2,000,000. Moreover, when the records of institutions for the blind have occasionally been studied, they also show the number and cost of this group to be much larger than is ordinarily supposed. For example, the president of the board of trustees of the school for the blind at Batavia, N. Y., Dr. F. Park Lewis, called attention to one family which, several years ago, had then cost the state of New York more than $50,000. And the end is not yet—with that family or with the others like it.

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* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

This brief retrospect will perhaps enable one to see at least the reasons for some legislation, referred to at the beginning of this report, and also why it is worth while to try to formulate a proposed law which will be the most practicable and efficient to lessen the continued propagation of hereditary blindness.

Those who are familiar with the earlier steps toward such legislation will remember that although it was evident that no law could be enacted, or perhaps should be enacted, which would interfere directly with marriage, on the other hand, when there was a strong probability that the children resulting from a certain union would become public charges, then it seemed only fair that the parties to such a marriage contract should give such a bond or bonds as would protect any citizen protesting, in due form, against the burden which he, as a taxpayer, would also probably be obliged to bear

The obvious justice of thus securing a taxpayer against probable loss has not been questioned; and further study shows that in states in which each party to a marriage contract must declare under oath his or her freedom from syphilis or *similar diseases, then it becomes comparatively* easy to add to the existing law the provision desired

The proposition will be generally accepted that any law which protects either of the parties to a marriage contract against the danger of syphilis is wise and beneficent While that protection may be primarily against infection, it also means protection against the hereditary transmission of the disease, as it is so often seen in the eyes, as in other portions of the body Any such recognition by law of the importance of hereditary defects is recognized by physicians and geneticists as of very great educational value for the public If that principle of giving protection to the unborn against syphilis can now be more definitely expressed in an amendment to that law giving protection against hereditary blindness, it is not too much to hope that as similar data are carefully collected and formulated with cool scientific judgment, we may ultimately obtain similar protection from certain forms of inherited insanity and other defects, mental and physical. The ultimate benefits that might be possible in this way can only be imagined

The proposed act is as follows:

AN ACT

TO AMEND THE DOMESTIC RELATION LAW, IN RELATION TO PREVENTION OF HEREDITARY BLINDNESS

The people of the state of New York, represented in Senate and Assembly, do enact as follows·

Section 1. Chapter Nineteen of the laws of nineteen hundred and nine, entitled "An act relating to domestic relations, constituting chapter fourteen of the consolidated laws," is hereby amended by inserting therein, after section (25) twenty five, a new section, to be section twenty six, to read as follows:

26 Prevention of hereditary blindness. (1) Any town or city clerk empowered to issue marriage licenses shall, before issuing such licenses, require a written statement from the parties in the following words "Neither myself nor, to the best of my knowledge and belief, any of my blood relatives within the second degree, have been affected with blindness: If so, I have been examined by and have submitted evidence in respect to such members of my family to a physician or expert in heredity, and his report shows that it is improbable that such blindness was transmissible by heredity " The clerk may examine witnesses or experts under oath to satisfy himself of the truth of the statement

If one of the applicants shall refuse or fail to make such statement, or if the clerk is not satisfied of the truth of the statements, he shall refuse to grant the license unless the applicant file a bond to the state treasurer, in an amount to be fixed by the clerk The bond shall be on the condition that if any child is born of the marriage and becomes a public charge on account of inherited blindness, then the cost of the support of the child up to the full amount of the bond shall be paid to the State of New York to be applied to the support of the child

(2) The determination of the clerk may be reviewed on certiorari by the county court of the county in which the clerk has his office, or if there be no such county clerk in any county, then by the Supreme Court sitting in and for the district in which such county is situated Review may be had at the instance of either applicant for license or any blood relative to the second degree of either applicant

(3) No such certiorari shall be granted unless notice of the application therefor is made within thirty days of the action of the clerk in refusing to grant the license without bond

(4) At the hearing, the judge or justice may appoint two physicians or other experts who are experienced in heredity or in the diseases of the eye to examine either applicant, or any relative affected by blindness, and make reports on such persons, and may adjourn the hearing for not more than ten days pending the making of such reports The judge or justice may permit either party at the hearing to present evidence, oral or written, to examine the physicians making reports, and he shall determine on the evidence as presented, including the reports of the physicians and the papers certified by the clerk, whether there is sufficient ground for believing that the applicant is afflicted with hereditary blindness If the judge or justice decides that the action of the clerk should be sustained, he shall fix the amount of the bond

(5) Each physician appointed by the judge or justice shall receive not to exceed $20 a day for each day necessarily employed in making investigation and testifying at the hearing

(6) A bond given under the provision of this section shall be in effect only until the woman reaches the age of 45 years A bond no longer in effect may be canceled on the application of any person bound thereunder.

(7) This Act shall take effect immediately.

Although this act relates to the state of New York, it is probable that, with suitable changes, either it could be fitted into a corresponding statute elsewhere, or if no provision for protection against syphilis existed in a given state, then provision could be made for that at the same time It is only necessary here to mention that in New York State the powers of the city or town clerk to investigate the facts alleged in an application for a marriage license are found in Section 14 of the Domestic Relations Law. Also that the bond is provided for by Section 306 of Chapter 705 of the Session Laws as amended by Chapter 437 of the Laws of 1924. The provision is now Section 306 of the State Charities Law

In spite of the length of this report, it would be an omission not to give credit to at least some of the sources from which our information was obtained, and also briefly to express our appreciation of the encouragement or assistance given in the preparation of this report.

All students of the eye are especially indebted to the Francis Galton Laboratory of London, the last of its publications containing the details, with plates, of some 350-odd families afflicted with a special type of hereditary blindness

A few years ago the Eugenics Record Office of Carnegie Institution of Washington issued as Bulletin 21 a list of publications on various hereditary eye defects, and the titles alone of the articles covered some forty pages

From such sources a committee like this obtains its principal data

Appreciation should be shown of information gained from those who have taken a wider view of eugenics as a whole. This includes the research work of such men as Davenport of the Carnegie Institution of Washington, Castle, East and McDougall of Harvard, and Morgan of Columbia, together with the work of Irving Fisher as president of the Eugenics Society of the United States of America, of Hon. Harry Olson, chief justice of the municipal court of Chicago, as organizer of the psychopathic laboratory as an adjunct to his court, and of the Eugenics Research Association, with headquarters at Cold Spring Harbor. Also Walter of Brown, Conklin of Princeton, Holmer of the University of California, Pearl of Johns Hopkins, Guyer of the University of Wisconsin, Goddard of the University of Ohio, Fairchild of the Department of Agriculture and Kellogg of the National Research Council, together with such writers as Preuse, Johnson, Wiggam, and numerous other students of this rapidly growing science of eugenics.

Finally, this committee would recommend that:

1. The thanks of the section be extended to all those who have assisted the committee in the preparation of this report
2. Ophthalmologists and physicians, especially those connected with institutions for the blind, be urged again to make use of their opportunities to obtain, publish or send to this committee all possible data as to the number and cost of those who are blind from hereditary causes.
3. Members of the section be urged to interest themselves in obtaining legislation like the model here presented, or in some other form, with a view to lessening the continued propagation of hereditary *blindness*

Lucien Howe.
William T. Belfield.
Harry T. Laughlin.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 18, 1925

LOWERING THE BLOOD PRESSURE WITH LIVER EXTRACT

In January, 1923, Dr. W. J. MacDonald,[1] a clinician of St. Catherines, Ontario, conceived the view that the liver secretes a substance that plays an important part in the regulation of blood uric acid, and that if such a substance could be recovered, it might be of service in the control of cancer. This conception was based on the fact, to which he himself refers, that Killian and Kast had shown a definite increase of uric acid in the blood of 80 per cent. of cases of internal cancer, and that Mann and Magath had found the uric acid in the blood mounting steadily until death in dogs from which the liver had been removed. During 1924, Dr. MacDonald prepared many extracts of liver and tested their toxicity on dogs and cats. Finally, in December, he noticed that the blood pressure fell steadily in two cases of carcinoma in which the extract was being used to reduce the uric acid in the blood. In the meantime Fishberg had shown that the uric acid is high in the blood of patients with essential arterial hypertension. Dr. MacDonald, therefore, finding that previous investigators, as far back as 1915, had used extracts of liver and of other internal gland tissues to reduce the blood pressure in experimental animals, determined to try the extract in a clinical case of high blood pressure.

The results obtained in the first case were so encouraging that the observations were extended to other patients. In all, thirty-three cases were studied, the age of the patients ranging from 45 to 67 years, with an average of 61 years. In these cases hypertension had persisted for varying periods, averaging six years; the average range of blood pressure before injection was 204 mm. systolic and 114 mm. diastolic. Physiologic sodium chlorid solution of extract of the liver was injected intravenously in different dosages. Twenty-five patients experienced no disagreeable symptoms, most of them reporting apparent relief. In eight cases, however, there were reactions of varying degrees, some of which closely resembled protein shock. There was an average fall in the systolic blood pressure of 62 mm., so that the average of the systolic pressure after injection in the thirty-three cases studied was 142 mm. There was an average fall in the diastolic blood pressure of 28 mm., so that the average of the diastolic pressure after injection was 86 mm.

Attempts were made to recover from the extract what appeared to be the active principle, and two elements were isolated that seemed to possess the powers of the whole extract. The observations of Dr. MacDonald were of such interest that plans have been made to continue the studies in the Department of Physiology and Connaught Laboratory of the University of Toronto, with the assistance of Dr. C. H. Best, known particularly for his work on insulin.

Coincidentally with the work of MacDonald, Dr. Ralph H. Major,[2] of the department of internal medicine in the University of Kansas School of Medicine undertook a series of experiments along similar lines, beginning with the assumption that some protein body had a pressor effect. He and his colleagues investigated some of the better known metabolites. It was found that creatin and creatinin had no effects on the blood pressure, but it was also found that methyl guanidin, a product of protein metabolism, had power to raise the blood pressure promptly and to maintain the increase for from four to five hours. Attempts were then made to determine the effects of certain substances on the hypertension produced by guanidin. Veratrum viride and amyl nitrite produced transient effects; but calcium chlorid produced a permanent fall in blood pressure, accompanied by marked cardiac irregularity. This irregularity was overcome by the addition of potassium chlorid to the calcium chlorid. If the combination of potassium and calcium chlorids is introduced before the administration of guanidin compounds, no rise in blood pressure occurs. A fall in the blood pressure was also secured by the injection of normal hydrochloric acid and ammonium chlorid. The parathyroid extracts of Hanson and Collip produced falls in the high blood pressure caused by the injection of the guanidin compounds.

A further series of experiments included the injection of extracts of liver, spleen, kidneys, muscles, ovaries and testes. Major found that liver extract has a profound effect on the high blood pressure due to guanidin, reducing it to normal in a few minutes and keeping it at a low level. The injection of a mixture of liver extract and of methyl guanidin is not followed by a rise in blood pressure. A number of patients suffering with arterial hypertension have been treated with the liver extracts with results that were striking, although Major emphasizes that caution must be observed in this work.

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[1] MacDonald, W. J.: Extractives of Liver Possessing Blood Pressure Reducing Properties, Proc. Soc. Exper. Biol. & Med. 22: 483, 1925; Canadian M. A. J. 15: 697 (July) 1925.

[2] Major, R. H.: Observations on the Cause and Treatment of Arterial Hypertension, J. Kansas M. Soc. 25: 177 (June) 1925.

It has been known for some time, as a result of the work of Dale and his colleagues in Great Britain, that histamin and various derivatives possess the power of causing marked falls in the blood pressure; it seems likely, moreover, that histamin or like substances are contained in appreciable quantities in the liver extracts that are used. Nevertheless, the investigators are convinced from subsequent work that protein shock plays little if any part in the phenomena, and are inclined to believe that the effect is not an ordinary protein effect due to cholin, histamin or peptone.

As may be surmised, much work remains to be done before a complete comprehension can be had of the value of this method, or its possibilities in the control of essential hypertension. Obviously, it is desirable to determine definitely the actual principle concerned and the mechanism by which the results are secured. . At the same time, it is clear that the liver extracts do have a definite effect in lowering the blood pressure. Their clinical value will depend not only on the securing of a stable and uniform extract, but also on the permanence of the fall in pressure and on its relation to other pathologic changes existing in the body. It is well that the experimental work is to be conducted under scientific and controlled conditions.

MUSCLE WORK AND PROTEIN METABOLISM

Muscle is unusually rich in protein; when foods rich in albuminous nutrients are under consideration, our thoughts are likely to turn first of all to meats—the edible forms of muscle tissue. During life, this substance is the seat of extensive metabolism. The contractile processes leading to external work and to heat production are of fundamental importance, and they go on in or about a protoplasmic structure characterized by its relative abundance of protein. Little wonder, then, that Liebig reached the conviction that during muscular activity the organized structures of the contractile tissue are disrupted so that the destruction of its protein will yield the energy for work. A sequence to this reasoning was the further idea that nutrient protein functions to replace the protein structures disintegrating during contraction.

This view has long been relegated to the category of abandoned hypotheses in physiology. The writers of today, following the lead of Carl Voit, give an entirely different interpretation of the energy metabolism of muscle. Thus, Mathews[1] states, in a pronouncement characteristic of what one may read in any current textbook of physiology: "The energy metabolism of muscle is, as it were, superimposed upon the formative metabolism. This metabolism is peculiar in that it does not directly involve any increase in protein catabolism. Muscular work does not increase the nitrogen output of the body or of muscle. This metabolism involves primarily the carbohydrates." This dictum has become emphasized even more of late through the studies of Embden, Hill, Meyerhof and others on the energetics of muscle—investigations in which the dominant rôle of carbohydrate in the contractile functions is stressed from many directions.[2]

Nevertheless, Cathcart[3] of Glasgow University has not hesitated to question the supposed settled conclusion of present-day physiologists that muscular work does not increase protein metabolism. He visualizes the active tissue as built up of a complex substance, protoplasm, which certainly plays the vital part in the various metabolic processes. These consist not merely of the production of work and heat, essentially catabolic phenomena, but also of the equally important anabolic phase associated with tissue restitution. Even if the carbohydrate supply is actually stored in the various cells in discrete form, Cathcart reasons, it must come into more intimate contact with the active metabolic tissue before it is utilized. There is no indubitable evidence as to whether or not it ever becomes an integral part of the active cell tissue. The reading of modern work, he adds, would suggest implicitly perhaps rather than explicitly that the material yielding the energy requisite for muscle contraction is a fuel which is, so to speak, stoked on to the cellular furnace; that, in other words, a superimposed temporary metabolism is possible.

However, there are seemingly cogent indications that changes affecting the nitrogenous components can and do take place in muscle as a result of activity. From a quantitative standpoint, they are overshadowed by the transformations involving the non-nitrogenous components. More than one investigator has observed that the nitrogen output in the urine is increased after work but has minimized the importance of such findings. Recent experiments of Cathcart seem to bring accurate supporting data. They suggest that in the normal course of contraction events there is "a regular throwing out of action of part of the protein element and a subsequent catabolism of this immobilized material." To the question as to why, if there is an active metabolism of nitrogenous compounds during muscular contraction, the excretion of nitrogenous waste is ordinarily increased so little thereby, Cathcart would reply that either the resulting fragments may be resynthesized into the protoplasmic structure, or the loss may be replaced out of ingested protein. In support of the latter suggestion is the well known fact that work tends to lead to hypertrophy of the muscles involved; that is, with associated retention of nitrogenous compounds.

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[1] Mathews, A P.: Textbook of Physiological Chemistry, New York, William Wood & Co., 1920

[2] When a Muscle Contracts, editorial, J. A. M. A. 84:442 (Feb. 7) 1925.

[3] Cathcart, E. P.: The Influence of Muscle Work on Protein Metabolism, Physiol. Rev. 5:225 (April) 1925.

It will not be easy to uproot the current fixed beliefs about the metabolism of muscle during work; nor do the newer concepts negate the conclusion that the most readily available combustible fuels of muscle are nonnitrogenous in nature. But Cathcart will not accept the conception of a nitrogenous structure in which protein must often assume the rôle of an acid buffer, in which unique compounds like creatin, creatinin and purin derivatives are subject to as yet little understood changes, and through which a continually altering blood supply is driven at varying velocities—all leaving the nitrogen factors inert and entirely unchanged. Hence he champions the view that muscle work leads to a definite though perhaps limited increase in the output of nitrogen, i. e., to increased catabolism of protein; and that the same muscle activity leads to the laying down of protein, i. e., to the stimulation of the anabolic processes in the broadest sense of the term. In other words, Cathcart concludes, the existent evidence points to a definitely enhanced metabolism of protein as the result of muscle activity.

THE CULTIVATION OF ENDAMEBA HISTOLYTICA

Scarcely more than half a century has elapsed since Lewis, in 1870, described an intestinal ameba, probably *Endameba coli*, in man. The organism *Endameba histolytica*, which has come to be associated with amebic dysentery, was first seen by Loesch in 1873 abroad, and in America in 1890 by Osler, who confirmed the fact that it occurred in abscesses of the liver. This pioneer work became responsible for the investigations of Councilman and Lafleur, in 1891, on the pathology of amebic dysentery and amebic abscess of the liver. Despite the well established etiologic relationships, these aspects of human protozoology received comparatively scant consideration from physicians until the World War raised a series of hitherto little considered problems of human disease. Entozoic amebas of man have been regarded as related essentially to the tropical or subtropical countries with respect to their distribution. Through the war-time studies, however, one fact of paramount importance has developed. As Hegner and Taliaferro[1] have pointed out, most infections with *Endameba histolytica*, the parasite of amebic dysentery, can no longer be considered tropical but are world wide in their distribution. In fact, these protozoologists add, we can sum up the geographic distribution of all the entozoic amebas of man by saying that they all occur, in different percentages in each species, wherever man occurs.

The detailed consideration of maladies that are attributable to microbiotic agencies has long since demonstrated the undeniable importance of isolating the living etiologic organism and growing it in "pure culture." The history of modern bacteriology abounds in illustrations of what this has meant for progress in the attack on the disease-producing forms. Recognition of their habitats and development and the products of their metabolism, the ability to reproduce diseases by inoculation with the isolated agents, and familiarity with their life history have brought bacterial toxins and their antitoxins into prominence and recognized usefulness. It has been remarked, indeed, that the introduction of methods of artificial cultivation marks the beginning of the science of microbiology.

Protozoology has lagged behind bacteriology in respect to the artificial cultivation of the forms with which it deals. The successful cultivation of amebas has become an accomplishment of the present decade. The claims of success in the case of the parasite of amebic dysentery have repeatedly been denied or disproved until most investigators seemed to despair of overcoming the difficulties. The feat of cultivation seems, however, to have been accomplished at last by Boeck and Drbohlav[2] of the Harvard Medical School. They report that in culture *Endameba histolytica* feeds on bacteria and red blood cells whenever the latter are furnished in the medium. The ingestion of bacteria by *Endameba histolytica*, when deprived of red blood corpuscles or cell fragments and juices, shows, they state, that some of our previous views regarding the nutrition of *Endameba histolytica* have been erroneous and that under certain conditions this ameba, like *Endameba coli* and others, may eat bacterial organisms. The pathogenicity of the amebas of the subcultures was apparently established; at any rate, kittens could be infected, and the protozoa recovered from the animals. Typical dysentery, with ulcerative colitis and occasionally hepatic abscess, also, were produced through the inoculations.

Another feature of possible great significance in relation to amebiasis has been reported from the same laboratory by Chiang.[3] It concerns the infection of rats with *Endameba histolytica*. The pathogenicity of the amebas found in such experimentally infected animals has been demonstrated by the inoculation of kittens and the production of dysentery and lesions containing amebas. The infection of rats with *Endameba histolytica* of human origin is readily transmitted from rat to rat by association in the same cage, so that the rat is clearly incriminated as a possible carrier of the causal agent of amebic dysentery. This is what Lynch[4] asserted a decade ago. The purely conjectural character of such conclusions must still be emphasized.

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[1] Hegner, R. W., and Taliaferro, W. H.: Human Protozoology, New York, the Macmillan Company, 1924.

[2] Boeck, W. C., and Drbohlav, J.: The Cultivation of Endameba Histolytica, Proc. Nat. Acad. Sc. **11:** 235 (May 15) 1925.

[3] Chiang, S. F.: The Rat as a Possible Carrier of the Dysentery Amoëba, Proc. Nat. Acad. Sc. **11:** 239 (May 15) 1925.

[4] Lynch, K. M.: The Rat a Carrier of a Dysenteric Ameba, J. A. M. A. **65:** 2232 (Dec. 25) 1915.

THE ETIOLOGY OF ACUTE APPENDICITIS

Acute appendicitis is a disease sufficiently frequent to warrant an extremely clear understanding of its etiology, but it would be rash to assert that this has been attained. As has happened in relation to other disorders, the progress of scientific study has served thus far mostly to dispel some of the extremes of belief, to correct exaggerated claims, and to preserve an open mind on the part of enthusiasts for a special hypothesis. The upshot has been to admit a variety of predisposing causes into the story of the etiology of appendicitis. Mechanical defects attributable to tissue obstructions, concretions and foreign materials no longer are the center of attention in this connection. The rôle of some specific micro-organism as the outstanding local causal agent of the onset has not been well sustained. Lately the statement that appendicitis may be of hematogenous origin, secondary to distant foci of infection, has been advanced with considerable enthusiasm and some forcible experimental evidence. The importance of realizing the manifold possibilities is illustrated in a well planned investigation at the Boston City Hospital by Warren,[1] who has made simultaneous bacteriologic and histologic examinations of a large number of appendixes removed under a variety of different clinical conditions. They show anew that acute appendicitis is not a specific disease due to one type of organism, a streptococcus as sometimes maintained. Like acute tonsillitis, acute endocarditis and similar infectious lesions, it may be caused by a variety of organisms. The inflammatory reaction does not vary with the organism found in the lesion, although it is perhaps more hemorrhagic in those cases in which *Streptococcus hemolyticus* is recovered. Warren believes that the evidence is against a hematogenous origin of acute appendicitis. According to him, the earliest stage of the lesion found in these acutely inflamed appendixes is necrosis and slight ulceration of the mucosa, not in those portions nearest the center of the lumen, as would be expected if a bacterial poison present in the lumen were causing the change, but down in the folds, somewhat suggesting the early inflammatory changes in the crypts of the tonsil. All the organisms found in the lesions, with the exception of a pneumococcus, are fairly common in the intestinal flora. There is little need, therefore, to assume a hematogenous origin of the infection. The character and location of the early lesions are decidedly in favor of an invasion from the lumen. The peristaltic action of the muscularis of the appendix is probably of great importance in keeping the contents of the lumen in motion, and any interference with this action, whether functional or structural, due perhaps to scarring from previous attacks, will favor the accumulation of bacteria in large numbers and ultimately permit sufficient concentration of bacterial products to cause necrosis of adjacent epithelium. Obstruction of the lumen, whether by kinking, partial obliteration by scarring, or the presence of fecaliths, would have the same effect. The occasional appendixes that show no organisms either on culture or on histologic examination, and yet are acutely inflamed, can probably be explained by the destruction of the invading organisms by the defense mechanism of the body, but only after they have done serious damage.

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[1] Warren, S.: The Etiology of Acute Appendicitis, Am. J. Path. 1: 241 (March) 1925.

Current Comment

THE CHALLENGE OF THE PATIENT WITH CHRONIC DISEASE

In the last quarter century, the span of life has been lengthened and certain infectious diseases have been eliminated from vast areas. The greatest obstacle now to further progress comprises the group of afflictions generally referred to as chronic disease. Seventy years ago such conditions caused one fifteenth of the total number of all deaths; today they are responsible for one half of all deaths. Opportunity to observe and study the causes of chronic ailments and to render a much needed service is available in the homes for the incurable and almshouses throughout the country. In a recent study of the leading institutions of this nature, Boas[1] found that the scientific study of disease in such homes is almost ignored. Inmates are looked on in general as beyond rehabilitation. The 1910 census showed that nearly two thirds of the 84,000 paupers in almshouses suffered from physical or mental defects and that the death rate among them was 207.7 per thousand enumerated. This condition apparently did not improve in the next ten years. In New York, in 1921, 67 per cent. of nearly 9,000 inmates of almshouses were sick or infirm. The few large institutions that have attempted to rehabilitate their inmates have been handicapped by inadequate appropriations. Some inmates need only custodial care; some need only nursing care; others require the facilities of a well organized hospital. The individual patient changes from one class to another on account of acute attacks of disease, exacerbations of chronic ailments, or accidents. Obviously, therefore, it is poor management to maintain an institution on the basis that every inmate needs at all times only one kind of care. Boas asserts that buildings designed at minimal expense for those who need a home should be provided, but the main building should be reserved for those who need hospital care and for whom there is hope for rehabilitation. County almshouses cannot be organized in this manner. The counties should pay a proportionate share in the maintenance by the state of large central institutions, which would give better service. The small homes for the incurable and the small almshouse have no place for an independent existence without hospital facilities.

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[1] Boas, E. P.: The Challenge of the Chronic Patient, Survey, Feb. 15, 1924.

GENESIS OF THE BLOOD PLATELETS

Ever since the view was advanced that the blood platelets play an important part in connection with the coagulation of the blood, the problem of the genesis of these cells has held a prominence almost equal to that of their function. Among the hypotheses advanced to account for the histogenesis of the plates are the suggestions that they originate from the nuclei of polymorphonuclear leukocytes; that they are the extruded remnants of the nuclei of young erythrocytes, and that they are detached fragments of the cytoplasm of the giant cells of the bone marrow. For none of these has the evidence been compelling; yet it is a matter of considerable importance in relation to certain diseases involving the circulatory system to have the origin and fate of the platelets settled. It is now generally conceded that under normal conditions the origin of the red cells is restricted to the bone marrow.[1] According to experiments at the Lister Institute in London by Bedson and Johnston,[2] the bone marrow is the parent tissue also of the platelets of the blood in normal extra-uterine life. The method of study was ingenious. Antiserums were prepared for various organs assumed to be concerned with platelet genesis. Only in the case of the use of antimarrow serum were these blood cells removed from the circulation. There was no evidence, however, that phagocytosis of red blood cells by megakaryocytes or other phagocytic cells has any connection with platelet production. The association of the platelets with the bone marrow finds further support in the clinical evidence that in the aplastic anemias, in which there is a general failure of the marrow, a great diminution in the number of platelets is an early and prominent change in the blood picture, while in myelogenous leukemia there is constantly an increase in the count.

THE BRITISH CANCER RESEARCH

The newspaper sensation of the current week, aside from the attempt to prevent by legal trial in Dayton, Tenn., the extension of knowledge regarding evolution, has been the announcement that certain British investigators have discovered an ultramicroscopic organism in association with experimental tumors in animals. During the last twenty years, numerous investigators have reported the finding of various bacterial organisms, both those visible under the microscope and the so-called ultramicroscopic variety in association with human cancer. None of the organisms thus far found that have been alleged to be the specific cause of the disease have been confirmed as the actual cause. Indeed, the majority of investigators who are devoting themselves particularly to studies of the cause of cancer believe that the disease is not caused primarily by a bacterial organism, but that it is the result of other factors, chemical or physical or related to some specific substance within the human cell, not yet determined. At the same time, it seems reasonable to believe that bacterial organisms of various kinds may find cancer tissue a suitable place for their growth within the human body, and may thus modify in various ways the growth and development of the cancer. Some years ago, Peyton Rous of the Rockefeller Institute described an ultramicroscopic organism or filtrable virus associated with certain experimental tumors in chickens. Recent studies indicate that this organism may be of the type of the much discussed "bacteriophage." Evidently the British investigators have pursued somewhat farther the work of Peyton Rous with this form of tumor, and their report is to some extent a confirmation of his investigations. It will be a considerable step to find the relationship of such an organism to cancer as it occurs in man and obviously the next procedure will be to determine whether any such relationship exists. Obviously, also, the present series of experiments, while of great interest from a research point of view, has no immediate bearing on either the prevention or the cure of human cancer.

Association News

TRANSACTIONS OF THE SECTION ON MISCELLANEOUS TOPICS

Publication of a Volume Containing the Papers Read in the Sessions on Radiology, with Discussions

It has been decided to publish a volume of Transactions of the Section on Miscellaneous Topics in order that the papers and discussions on radiology presented at the Atlantic City Session may be available to all who are interested in that subject. The volume will be sold at $1.50 per copy. Orders should be sent to the American Medical Association, 535 North Dearborn Street, Chicago, specifying "Transactions of the Section on Miscellaneous Topics—Radiology—1925."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Dr. Cecil Greer, Chicago, has been appointed resident physician and given charge of the medical department of the Arkansas Boys' Industrial School, Pine Bluff. ——Dr. John C. Swindle, Walnut Ridge, has been reappointed a member of the state medical examining board for a term of five years.——Dr. James R. Wayne, Jr., Little Rock, has been appointed adjutant general on the governor's staff.

CALIFORNIA

Fifteen Hundred Chiropractors Licensed.—James Compton, secretary, California State Board of Chiropractic Examiners, recently announced that in the last few months the board had licensed 1,542 chiropractors.

Hospital News.—The first unit of the new Burbank Hospital, Burbank, was recently opened, and plans for the second unit are being prepared.——Chinatown in San Francisco is planning the formal opening of a new hospital which will accommodate fifty-five patients. Some members of the medical and nursing staffs will be Chinese.——The Lutheran Hospital, Los Angeles, is constructing a nine story building which will cost $1,500,000.——The Jared Sidney Torrance Memorial Hospital, Torrance, was recently opened. Its capacity is forty beds and the cost was $115,000.——The Siskiyou County Hospital, Yreka, is planning a new home, which will cost $150,000.

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[1] Sabin, F. R.: On the Origin of the Cells of the Blood, Physiol. Rev. 2:38 (Jan.) 1922.

[2] Bedson, S. P., and Johnston, Mary E.: Further Observations on Platelet Genesis, J. Path. & Bacteriol. 28:101 (Jan.) 1925.

"Colonel Bindihan Ghadiali, D.C., M.D., Ph.D., LL.D."—The department of justice recently arrested in Seattle Colonel Ghadiali, otherwise known in San Francisco as "Dinshah," on a charge of violating the Mann Act, it is reported. According to a copy of the articles of incorporation of the "Spectro-Chrome Institute," Ghadiali is the originator, developer and applicator of "spectro-chrome therapy" for "restoration of the human radioactive and radioeminative equilibrium by attuned color waves without the use of drugs, manipulation or surgery." Ghadiali, whose former address apparently was 2401 North Broad Street, Philadelphia, was one of the incorporators of the "institute."

COLORADO

Personal.—Dr. Robert T. Frank, Denver, has been appointed attending gynecologist to Mount Sinai Hospital, New York.——Dr. Frederick R. Baker, Palmer Lake, has taken up his duties as county physician for El Paso County.——H. W. Wolcott, assistant superintendent, Wesley Memorial Hospital, Chicago, has been appointed superintendent of St. Luke's Hospital, Denver, effective, July 15.——Dr. Edward Jackson, Denver, was recently awarded the Leslie Dana medal in St. Louis. The medalist is selected each year by the National Committee for the Prevention of Blindness, in cooperation with the Missouri Commission for the Blind.——Dr. Clough T. Burnett has been elected president of the Denver Tuberculosis Society.——The faculty of the Medical School of the University of Colorado gave a dinner, June 30, in honor of Dr. Charles N. Meader, on the occasion of his retirement as dean of the medical school.

DISTRICT OF COLUMBIA

Sanitary Survey of Potomac River.—A survey of the waters of the Potomac River in the vicinity of Washington to determine what action, if any, may be taken to render the river safe for bathing has been started by the U. S. Public Health Service in cooperation with the District health officer, Dr. William C. Fowler. The engineering problems relating to the disposal of Washington sewage into the Potomac 7 miles below Washington, the character of the small streams that flow into the Potomac and what pollution, if any, occurs on such streams, and the fact that the Potomac at Washington is affected by ebb and flow of tide water are among the subjects to be included in the survey. The report will be available to Congress when it again considers the question of adequate outdoor public bathing facilities for the District of Columbia. The Potomac River at present is polluted and dangerous to health. If it is possible to reduce the river pollution through better disposal of sewage so that the river may be safe for public bathing, the problem of outdoor bathing will be solved for Washington. If it is found that the river cannot be used, then Congress will have to turn to the establishment of artificial pools filled with filtered water. The purpose of the present survey is to place the fullest information in the hands of Congress when it undertakes to establish bathing beaches for the District of Columbia.

ILLINOIS

Physician Fined.—It is reported that Dr. William Bridge and C. F. Schultz, druggist, both of Elgin, were fined $1,500 each, June 30, in federal court, Chicago, on charges of violating the Harrison Narcotic Law.

Tax for Community Nurses.—A new law in Illinois provides that cities of from 5,000 to 100,000 people may levy a three-tenths mill tax to pay the salaries of community nurses who are appointive by the mayor on recommendation of the local board of health. At present many of the public health nurses of the state depend on private sources involving, says the state department of health, fund raising campaigns and public subscriptions for financial support.

Better Babies Conference.—Applications for entering babies in the tenth annual State Fair Better Babies Conference, to be held in Springfield, September 19-26, will be accepted up to September 12, unless the capacity is reached before that date. More than 1,300 babies, representing fifty counties in the state, were examined last year, and a staff of about 100 physicians, psychiatrists, nurses and others make up the organization that gives the examinations. Fifty-three awards, in the form of savings bank accounts which vary from $2 to $100 each, and other prizes, are offered to children found to be most nearly perfect. Children between 6 months and 5 years of age are eligible to compete, as well as families of six children under 16 years of age, and children up to 6 years of age examined last year may compete for improvement awards.

Chicago

Health Commissioner Requests Funds.—Dr. Herman N. Bundesen, commissioner of health of Chicago, renewed his request to the council for $25,000 to combat the threatened spread of smallpox. Dr. Bundesen said, it is reported, that the $4,000 granted, June 4, by the city council has been expended in vaccinating those who have been exposed to smallpox, and that the present smallpox situation in Chicago is more serious than at any time since 1905.

Personal.—Dr. George M. Curtis has been appointed associate professor of surgery at the University of Chicago and associate professor of experimental surgery under the Douglas Smith Foundation for Research of the University of Chicago. Dr. Curtis returns to the University of Bern, where he has an appointment as assistant in the surgical clinic under Dr. F. DeQuervain at the Inselspital, pending the opening of the new University of Chicago Hospital.

Committee Objects to Germ Ordinance.—An ordinance has been completed in the office of the corporation counsel of Chicago for submission to the city council, which would regulate the possession, selling, giving away or otherwise distributing pathogenic bacteria. The following resolution concerning the ordinance has been adopted, it is reported, by a special advisory committee of the Chicago Department of Health, comprising Drs. Ludvig Hektoen, Frank J. Norton, Alexander A. Day, James P. Simonds, David J. Davis, Lloyd L. Arnold, Josiah J. Moore, Charles P. Caldwell, Jacob C. Geiger and Frederick O. Tonney:

> It is the sense of this committee that the control of the distribution of pathogenic cultures among laboratories, universities and research institutions by ordinance is impractical, and that the attempt so to control them will be a serious obstacle to teaching and will retard scientific progress. Such ordinances are futile and tend to break down respect for law.

IOWA

Occupational Therapy Association.—At a state-wide meeting, July 1, at Iowa City, the Iowa Occupational Therapy Association was formed and the following officers elected: Bird T. Baldwin, Ph.D., research professor of educational psychology, State University of Iowa, president, and Dr. Julia F. Hill, Des Moines, secretary-treasurer. There were twenty-four delegates at the meeting from hospitals in the state.

KANSAS

Hospital News.—Dr. David E. Clopper, Kansas City, is constructing a $50,000 private hospital at Thirty-Seventh Street and Strong Avenue, which will be completed in August.

Personal.—Dr. John F. Hassig, Kansas City, has been reelected president of the state board of medical registration and examination. Dr. Albert S. Ross, Sabetha, was elected secretary.

State Board Refuses License.—According to the Mount Vernon, Mo., *Record*, the Kansas State Board of Medical Registration recently refused to restore a license to practice medicine to Dr. William A. Nixon, Great Bend. Dr. Nixon's license, it is said, had been revoked following his sentence to the penitentiary.

KENTUCKY

Personal.—Dr. William M. Elliott, Lancaster, has been appointed superintendent of the Central States Hospital, Lakeland, to succeed Dr. Walter A. Jillson, resigned.——Dr. S. C. Smith has been appointed chief surgeon at the Methodist Hospital, Pikeville, to succeed Dr. William C. Gardner, resigned.——Dr. Floyd P. Allen, formerly of Ann Arbor, Mich., assumed the duties of health officer of Paducah, July 1.

LOUISIANA

Personal.—Dr. Alexander J. Azar has resigned from the teaching staff of Tulane University to engage in private practice.

Hospital News.—A contract has been awarded for the construction of a nurses' home in connection with the Baptist Hospital, New Orleans, for about $92,000. Work will begin at once. The building will accommodate, when completed, 120 nurses.

Building for Epileptics.—Mrs. William H. Dielman, New Orleans, made a gift of a building for epileptic patients, to be erected on land owned by the Home for Incurables, at a meeting of the board, July 7. The structure will cost more than $30,000 and be a memorial to Mrs. Dielman's daughter, who died four years ago.

MAINE

Personal.—Dr. William Holt has been appointed city physician of Portland to succeed Dr. E. H. Drake, resigned.——Dr. Ralph F. Goodhue, Portland, has been appointed by the governor medical examiner of Cumberland County.

Superintendents to Report Venereal Disease.—The eighty-second legislature passed an amendment which requires that superintendents of state, county and municipal, charitable or correctional institutions report to the state department of health, not later than fourteen days before the estimated date or release, any inmate who is effected with a venereal disease in an infectious form.

MARYLAND

University News.—William W. Cort, Ph.D., associate professor of helminthology, department of medical zoology, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, has been promoted to a professorship of helminthology.

Fellowships in Plastic Surgery.—Joseph S. Ames, LL.D., acting president of Johns Hopkins University, Baltimore, has announced the establishment at Johns Hopkins Medical School of two fellowships in plastic surgery, each of three years' tenure, by the General Educational Board of New York. The fellowships are the first of their kind established in this country, and are open to doctors of medicine who have shown ability as students. They afford an opportunity for research and laboratory work and the incumbents will be selected so that continuity will be provided, one student being always engaged in a particular investigation. Dr. Ames also announced a fund of $50,000 established by James Speyer to facilitate visits to Johns Hopkins University by distinguished scientists connected with departments of the natural sciences of the universities of Germany.

MASSACHUSETTS

Dr. Packard Retires.—Dr. Horace Packard, Boston, for many years professor of surgery at the Boston University School of Medicine, recently announced his intention to retire from active practice, and a dinner in his honor was tendered by his associates at the Hotel Somerset. Dr. Packard is in his seventieth year.

Dr. Worcester Appointed Professor of Hygiene. — The announcement has been made at Harvard University, Cambridge, that Dr. Alfred Worcester has been appointed Henry K. Oliver professor of hygiene. Dr. Worcester will serve also as head of the department of hygiene and physical education, of which Dr. Derric C. Parmenter has been acting head this year, following the resignation of Dr. Roger I. Lee, Boston, in 1924.

Personal.—Dr. Ransom A. Greene, until recently superintendent of the Taunton State Hospital, has been appointed superintendent of the Walter E. Fernald State School, formerly the Massachusetts School for the Feeble-Minded, at Waverly.——Dr. Winfred Overholser, Boston, has been appointed director of the division for the examination of prisoners of the State Department of Mental Diseases, to succeed Dr. Ralph M. Chambers, who becomes superintendent of the Taunton State Hospital.——Dr. James L. Gamble has been promoted to associate professor of pediatrics at the Harvard University Medical School, Boston.

MICHIGAN

Smallpox Epidemic Controlled. — The county physician reports that the smallpox epidemic in the vicinity of Recreation Park is under control. There has been a total of twenty-eight cases and no deaths.

Personal.—Dr. Herman C. Emmert, Detroit, has been appointed professor of bacteriology and pharmaceutic botany at the Detroit College of Pharmacy and Chemistry.——Dr. Charles W. Edmunds of the University of Michigan Medical School, Ann Arbor, has been invited by the health committee of the League of Nations to attend a conference in Geneva on international standards for a number of drugs and medicines, and will sail this month.——Dr. Dean Lewis, Chicago, conducted a surgical clinic, June 30, at the New Butterworth Hospital, Grand Rapids; Dr. Francis M. Pottenger, Monrovia, Calif., conducted a medical clinic in Grand Rapids, June 9.——Dr. Earl B. McKinley, Sault Ste. Marie, a fellow of the National Research Council in Medicine with Professor Bordet at the University of Brussels, has accepted the assistant professorship of bacteriology at Columbia University College of Physicians and Surgeons, New York City.

MISSISSIPPI

Health Units Combined.—At a meeting of the board of supervisors, July 6, at Clarksdale, it was voted to combine the county health office and the Clarksdale health unit, thus giving the county health officer control over the health situation in Coahoma County. Dr. Robert R. Kirkpatrick will be the county health officer.

Personal. — Dr. Milton W. Robertson, Rienzi, has been appointed health officer of Alcorn County to succeed Dr. James S. Voyles, who has been the county health officer for eight years and was not an applicant for reappointment.——Dr. William W. Reynolds has been appointed county health officer of Lauderdale County, to succeed Dr. Inman W. Cooper, resigned.

NEBRASKA

Hospital News. — A $250,000 addition to St. Catherine's Hospital, Omaha, having a capacity of 165 beds, was recently opened.——A contract has been let for the second and third units of the Lincoln Methodist Hospital, Lincoln. The buildings will be one story structures and will cost $100,000.

Dr. Bridges Heads Department of Medicine.—The dean, Dr. John Jay Keegan, of the University of Nebraska College of Medicine, Omaha, announced, July 2, the retirement of Dr. LeRoy Crummer, Omaha, as active head of the department of medicine and the appointment of Dr. Edson L. Bridges to that position. Dr. Crummer has for many years been connected with the medical school and will continue on the faculty as an emeritus professor. Dr. Bridges also has been a teacher in the school for a number of years. Dr. Irving S. Cutter, former dean, left Omaha, July 2, to enter his new field of work at Northwestern University Medical School, Chicago.

NEW HAMPSHIRE

Society News.—The New England Health Institute, an annual school for a week's instruction in public health, will meet next year in Concord in May. Dr. Charles G. Duncan, secretary of the state board of health, has been selected as director of the institute.

Constable Practices Medicine.—Bartley Carleton, a constable at Center Ossipee, was recently arraigned in superior court on an indictment charging him with practicing medicine without a license, to which he pleaded guilty, it is reported, and was fined $25 and costs.

NEW JERSEY

Medical Examiner Reappointed.—Governor Silzer, July 10, reappointed Dr. Charles A. Groves, East Orange, to the state board of medical examiners.

Society News.—Dr. Samuel B. English, superintendent of the New Jersey State Sanatorium, Glen Gardener, recently addressed the Somerset County Medical Society, at Somerville, on the diagnosis of tuberculosis.

Increase in Infantile Paralysis.—The prevalence of infantile paralysis in lower Jersey City during the last few weeks is regarded as serious by health authorities there. Seven infants, ranging in age from 17 months to 3 years, are now in the Contagious Disease Hospital at Laurel Hill. This is said to be the greatest number of cases on record in the city since the epidemic of July, 1916. Four of the children sent to the hospital were taken from the Whittier Settlement House.

One of Eight Chiropractors Pass Examination. — At the annual meeting of the state board of medical examiners at Asbury Park, July 5, it was announced that only one of eight chiropractors who applied for licenses had been passed. The secretary of the board reported that fifty-seven out of the sixty-two applicants for medical licenses had been passed. Dr. William Perry Watson, Jersey City, was elected president of the board, succeeding Dr. Joseph H. Bryan, Asbury Park. Dr. James J. McGuire, Trenton, was reelected treasurer and Dr. Alexander MacAlister, Camden, was reelected secretary.

NEW MEXICO

Personal.—Dr. Emmett I. Vaughn, who has been engaged for several years in Central America and Mexico in health work for the Rockefeller Foundation, New York, has been appointed health officer of Eddy County.——Dr. Harry A. Miller, Clovis, has been appointed by the governor a member of the public welfare board, and Drs. A. M. Smith, Farmington, and William R. Lovelace, Albuquerque, members of the state board of medical examiners.

NEW YORK

Park Presented as Memorial.—Dr. Haven Emerson has presented a park, a natural wooded tract on the shore of Peconic Bay, to the town of Southold as a memorial to its soldiers killed in the World War. Dr. Emerson has a country home in that vicinity.

School for Problem Boys.—Edwin Gould has donated $30,000 to the Berkshire Industrial Farm School for Problem Boys, Canaan, N. Y., for the construction of a kitchen and laundry building. The school has at present eight buildings and when completed will accommodate 140 boys.

Business Men Endorse Vaccination.—The state chamber of commerce recently passed a resolution commending the New York City Health Department for its campaign in behalf of smallpox vaccination and concluded its memorial by urging its own members to set an example to the community by being vaccinated.

Smallpox Quarantine Removed.—The spread of smallpox, which has been prevalent in the township of North Hempstead, L. I., for six weeks, has been checked and the quarantine removed from every house in which there has been a case. During the epidemic, eighty-four cases were reported in the surrounding township. There were no deaths.

Veterans' Bureau Hospital Site.—The 1,000 bed hospital to be constructed by the U. S. Veterans' Bureau in the New York district will be located near Northport, L. I. A tract of 500 acres on the north shore has been acquired, and surveys are being made preparatory to constructing the hospital. The institution will be for neuropsychiatric patients and will cost between $2,000,000 and $3,000,000.

Typhoid Outbreak.—An outbreak of fifteen cases of typhoid fever in Nyack and four in Hackensack, N. J., have been traced, it is reported, to a spring supplying drinking water to Hook Mountain beach in Palisades Interstate Park. Other cases have been reported in nearby towns. It is said that at least fifty cases in the countryside are attributed to this spring, which was closed, July 7, pending an investigation by the state department of health.

Hospital News.—Ground was broken, June 22, for the new building of Mary Immaculate Hospital, Jamaica, which will be erected at a cost of $1,500,000.——James C. McGuire was elected president of the Knickerbocker Hospital, New York City, at a special meeting of the board of directors, June 20. He has been a member of the board of directors for more than twenty years.——Rochester will construct a $240,000 municipal hospital building adjacent to the new University of Rochester plant.

Increase in Alcoholism.—There were eleven times as many deaths in New York from alcoholism in May, 1925, as the number recorded for the corresponding month in 1920, a year when deaths from alcoholism was at a minimum following the advent of prohibition. The seventy-nine deaths from alcoholism in May, according to the state health commissioner, probably represent only a small portion of the people who died from either "bad liquor" or the excessive use of alcohol. The number of deaths from alcoholism has increased annually since 1920.

New York City

Child Welfare Employees Dismissed.—The Child Welfare Commission offices in the Children's Court Building have been closed and the state board's staff of employees dismissed. The legislature failed at the last moment to make an appropriation for the commission, so it is unable to continue work. The commission was preparing to give attention this summer, among other things, to the conduct of baby-farms.

Radio Stations Discontinue Landis Advertising.—Word comes now, says the New York *Medical Week*, that Station WMCA at the Hotel McAlpin and the company that controls the subway and elevated railway posters have put an end to Landis "ads." The first steps in the campaign against the advertising of Dr. Leonard L. Landis was the discontinuing of the House of Health talks by Stations WFBH and WHN.

Underground Sewage Plant.—New York has recently installed and is now operating a sewage screening and chlorinating plant to eliminate pollution of New York Harbor. It is located entirely underground, 35 feet below the street level, and has a capacity of 40 million gallons of sewage daily. This plant serves the area bounded by Fourteenth Street on the North and Broadway on the East. The cost of construction was about $400,000.

Personal.—Dr. Henry Keller has been appointed attending orthopedic surgeon to the Central Neurologic Hospital, Department of Public Welfare.——Prof. Wilhelm Neumann, Vienna, arrived in New York on the *George Washington*, July 2.——Arthur H. Estabrook, Ph.D., was elected president of the Eugenics Research Association at the annual meeting, Cold Spring Harbor, Long Island, June 27.——Helen P. Woolley, psychologist of the Merrill-Palmer School, Detroit, has been appointed director of the Institute of Child Welfare Research and professor of education, with a seat in the faculty in Teachers' College, Columbia University.

Pasteurizing Regulations Proved Adequate.—Nearly three years' research has demonstrated that the regulations adopted by New York City for the pasteurization of milk are adequate, it was stated at the Museum of Hygiene of New York University and Bellevue Hospital, July 1. In the tests, tuberculosis, typhoid, paratyphoid, diphtheria, septic sore throat and other germs were used, typhoid bacilli being grown in milk until it contained 2,000,000 bacilli per drop and tubercle bacilli until they existed in samples at the rate of 30,000,000 germs to the teaspoonful. The contaminated milk specimens were then pasteurized in the manner laid down by the New York Health Department, and sterilization was found to be complete. There were in all 6,574 tests made. The investigation was started three years ago after charges had been made that the pasteurization rules of the health department were insufficient. The Borden Company turned over its plant at Endicott for the work. Dr. Hugh S. Cumming and Charles Armstrong of the U. S. Public Health Service, and Drs. Milton J. Rosenau, Augustus B. Wadsworth and others collaborated in the experiments.

OHIO

Physician Sentenced.—Dr. Charles R. Walsh, Cleveland, it is reported, was taken to the Ohio penitentiary, July 3, to serve a four year sentence, having been found guilty of performing an illegal operation.

Smallpox Quarantine.—Because of the spread of smallpox in Cleveland in a district bounded by Buckeye and Kinsman roads and East One Hundred and Twenty-Sixth and East One Hundred and Thirty-Fourth streets, 30,000 persons in that area were quarantined a few days ago. There were then seven cases of smallpox in the district. A canvass was made, and persons not showing satisfactory evidence of vaccination were vaccinated. There were four deaths in Cleveland from smallpox in June.

Arrests for Dry Sweeping.—Thirty persons were convicted and fined in municipal court at Cincinnati during June for sweeping the sidewalks in violation of an ordinance which provides that it shall be unlawful to sweep any sidewalk when the temperature is above the freezing point unless it shall have been sprinkled with water sufficient to avoid raising dust. More than 1,500 merchants up to July 10 had pledged their cooperation to carry out this ordinance, and circulars were distributed for signature pledging individuals to flush their sidewalks daily.

New Laws.—The eighty-sixth Ohio general assembly enacted 224 new laws, to become effective between April 15 and July 23. One of these requires the reregistration of dentists in Ohio every five years; this became effective, July 10. Another requires that all practitioners of "the limited branches of medicine" take an examination for licensure regardless of whether or not they practiced for five continuous years prior to 1915, when the act was passed; this became effective, June 8. Another requires school enumerators to submit a list of all crippled children to the juvenile court, which will certify the list to the county health commissioner for investigation and examination, the results of which he will furnish to the state health department, which may then apply to the juvenile court for authority to place children needing treatment in the custody of the state welfare department.

PENNSYLVANIA

Industries Must Not Pollute Water Supplies.—The Pennsylvania Supreme Court recently rendered a decision that the discharge of acid coal mine waste into a public water supply created a nuisance which must be abated. The suit was brought to restrain about twenty coal companies and individuals from polluting Indian Creek with drainage from coal mines. The lower court held that to stop the pollution would deprive the mine owners of their rights without due process of law. The higher court ruled, according to *Health News*, that the mine owners "have no right of any kind to drain their mine waters into the stream, considering the public use which is made of its waters," and that the Sanderson case, which for years has been considered as governing similar situations in favor of mine owners, did not apply in this case.

Philadelphia

Personal.—Dr. William W. Keen received the first award of the Susan Colvin-Rosenberger medal of honor at the commencement of Brown University, June 17.——Alfred N. Richards, Ph.D., professor of pharmacology, University of Pennsylvania School of Medicine, received the honorary degree of doctor of science at the commencement of that school, June 17.——Dr. John A. Kolmer, professor of pathology and bacteriology, Graduate School of Medicine, University of Pennsylvania, addressed the Lycoming County Medical Society, Williamsport, July 10.——Dr. James Hendrie Lloyd has resigned as visiting chief in neurology at the Philadelphia General Hospital, and Dr. Edward A. Strecker, medical director, women's department, Pennsylvania Hospital for Mental and Nervous Diseases, and recently appointed professor of mental and nervous diseases at Jefferson Medical College, has been named to succeed Dr. Lloyd.

TENNESSEE

Personal.—Dr. Arthur W. Wright of the Boston City Hospital, Boston, has been appointed assistant professor of pathology at Vanderbilt University Medical School, Nashville. ——Dr. Hermon Hawkins was appointed city health officer of Jackson to succeed Dr. Frank Murtaugh.

Hospital News.—St. Joseph's Hospital, Memphis, is building a $400,000 addition, which will provide 150 private rooms, offices and two operating rooms.——The city of Dayton recently voted to contribute $30,000 to construct the Rena Clark Haggard Memorial Hospital, for which Mr. Haggard donated $40,000. The city will name one of the three trustees. ——The Memorial Hospital, Jackson, which takes the place of the old Civic League Hospital, was recently opened. The board of the old hospital will continue in charge of the new.

Health Scholarship.—Mrs. Katie Bell Conyers, a teacher in the Memphis public schools, has been awarded a health scholarship for $500 in a contest among students in a special course in public health for school teachers, conducted by the superintendent of health of Memphis, the object of which was to furnish teachers special instruction along public health lines, so that their pupils might develop good health habits. The Metropolitan Life Insurance Company provided the award, which was in addition to awards granted last year among elementary school teachers in fifty cities.

TEXAS

Judge Upholds Vaccination.—Following a smallpox epidemic in San Antonio, during which the health authorities ordered school children vaccinated, the ordinance authorizing vaccination was attacked and the case was taken before the court of civil appeals. The ordinance was upheld.

State Board of Health.—The governor has appointed the following physicians members of the state board of health: Drs. Murff F. Bledsoe, Port Arthur; Robert W. Noble, Temple; Edward L. Rose, Port Arthur; Albert H. Braden, Houston; Eugene L. Lawrence, Thorndale, and Phil Russell, Fort Worth. The state health officer, Dr. Harry O. Sappington, is president and executive officer of the board.

WASHINGTON

Applicants for Licenses.—Fifty-five applicants took the examination, July 6, at Olympia for a license to practice medicine and surgery in the state, it is reported. This is one of the largest groups of applicants in the history of the state.

Chamber of Commerce Disapproves Hospital Campaigns.—The committee appointed by the Chamber of Commerce of Seattle to investigate the hospital situation reported that there are now under consideration proposals to raise for the Seattle General Hospital, $1,200,000; Baptist Hospital, $500,000; West Seattle Hospital, $200,000; Swedish Hospital, $200,000. The first three represent $1,200,000 in contributions and $700,000 in bonds, while the last one has, privately, arranged for funds. The committee found that: 1. Practically all hospitals in Seattle do some charitable work but that the great bulk of it is done by the city and county hospitals. 2. There are considerably fewer hospital beds in Seattle than the number required by certain well known standard requirements, yet no emergency exists in regard to hospitalization. 3. The campaigns contemplated are not based on a scientific study of hospital needs. 4. Greater efforts should be made toward coordinating the campaigns efficiently to secure relief, and the continuation of the present campaigns for funds will endanger the success of any one of them and probably adversely affect any campaign for necessary charities. The committee recommended that the chamber of commerce withhold its endorsement of any hospital plan proposed to be financed by subscription or local bond issues until a complete survey determines the hospital situation and needs and the best method for meeting the need. The trustees of the King County Medical Society, as well as the chamber of commerce, approved the report.

WEST VIRGINIA

Governor Appoints Chiropractors on Public Health Council.—Following the recent passage of the bill creating a state board of chiropractic examiners, the governor has appointed two chiropractors to be members of the West Virginia Public Health Council.

Dr. Guittard Resigns.—Dr. Virgil D. Guittard, who came to Wheeling two months ago from Maysville, Ky., to be county health officer, has resigned and accepted a similar position in Michigan. Dr. Charles C. Hedges, Grafton, has been appointed to succeed him.

Society News.—Dr. Grover Cleveland Weil, Pittsburgh, recently addressed the Ohio County Medical Society, Wheeling, on "Fractures of the Pelvis"; Dr. Harold A. Miller, Pittsburgh, on "Toxemias of Pregnancy," and Dr. George J. Heurer, Cincinnati, on "Empyema."

Personal.—Dr. William H. McLain has been reappointed health commissioner of Wheeling for a term of four years. ——Dr. Joseph. E. Rader has been appointed city health officer of Huntington, and Drs. Benjamin L. Hume, Charles L. Hopkins, Joseph C. Ford and Simpson A. Smith have been appointed city physicians.——Dr. Lucian N. Yost, Fairmont, for many years health officer of Marion County, has resigned to resume private practice.——Dr. Henry F. Spillers, Wheeling, has been appointed superintendent of the Ohio Valley General Hospital to succeed Dr. Charles Wilkins, deceased.

WISCONSIN

Music Doctor Arrested.—In a campaign against alleged illegal practitioners, the first person arrested was Hyland Slater-Wilson, a musician of Kenosha, who also conducts a health institute claiming to cure certain diseases by music.

Dr. Frick Pleads Guilty.—The *Wisconsin Medical Journal* notes that Dr. Lewis Frick, Athens, has entered a plea of guilty in the U. S. District Court to charges of conspiracy to violate the Volstead Act by selling his prescription book to a druggist.

New Restrictions on Chiropractors.—The new law relating to the practice of chiropractic in Wisconsin provides that no person shall practice unless he shall have, among other things, a certificate of registration in the basic sciences (The Journal, June 27, p. 2011). The law also restricts advertising by chiropractors and prohibits them from using the title of doctor.

Governor Signs Single Permit Bill.—A law becomes effective, Jan. 1, 1926, which substitutes a single permit for physicians to prescribe liquor instead of the present triplicate system under the state prohibition enforcement act. At present physicians must have separate permits, with a fee of $10 for each of the so-called "privileges" which are given as one in the federal permit. This law will save the physicians of Wisconsin, it is estimated, from $5,000 to $7,500 a year.

War on Socialized Medicine.—The Kenosha County Medical Society, Kenosha, has devoted all its meetings this year except one "to waging war on socialized medicine, pseudo-charity and illegal practitioners of medicine." At the first open meeting, the city manager, a member of the city council, the health commissioner, the poor commissioner and a representative from each of the organizations interested in charity (Community Chest, City Free Clinic and Service League) were invited. The medical society called attention, among other things, to the errors of activity of social workers under the direct supervision of the health department, Service League and City Free Clinic, wherein some of them were said to have made diagnoses, prescribed treatment and criticized and recommended physicians to patients.

WYOMING

License Class A Graduates Only.—The Wyoming Board of Medical Examiners has adopted a resolution that it will recognize as applicants for a license only graduates of Class A medical colleges.

CANADA

Personal.—Dr. Charles H. Best, Toronto, associate of Dr. Banting, will leave this month for Europe to spend a year in medical research.

Society News.—At the fifth annual meeting of the Canadian Society of Anesthetists recently in Toronto, Dr. Charles Larocque, Montreal, was elected president; Dr. Charles H. Bastin, Vancouver, vice president, and Dr. Harry J. Shields, Toronto, secretary-treasurer. The executive officer for the United States is Dr. Everett A. Tyler, Philadelphia.

GENERAL

Independence Day Fatalities.—The total holiday fatalities throughout the country, July 4, it is reported, amounted to 250, as the result of automobile accidents, drowning and fireworks. The day passed with few deaths from fireworks and explosions. New York accounted for twenty-six of the fatalities, and Massachusetts, forty-nine.

American Board of Otolaryngology.—At the examination held by this board in Philadelphia, May 26, 157 applicants were examined, of whom 137 passed and twenty failed. The next examination will be at the University of Illinois School of Medicine, Chicago, October 19. Applications may be secured from the secretary, Dr. Hanau W. Loeb, 1402 South Grand Boulevard, St. Louis.

Veterans' Bureau Bulletin.—The United States Veterans' Bureau has undertaken the publication of a medical bulletin, the purpose of which is to maintain a high standard of medical service, to promote research and to present the results of study of medical statistics contained in the records of the bureau. The associate editors are the members of the U. S. Veterans' Bureau Medical Council.

Society News.—The fourth annual Congress of Anesthetists marked the thirteenth annual meeting of the American Association of Anesthetists, now the Associated Anesthetists of the United States and Canada, which was organized in 1912, and the fifth annual meeting of the International Anesthesia Research Society.——The American Academy of Physiotherapy will hold its fall meeting, October 15-17, at the Copley-Plaza Hotel, Boston.

Trachoma Headquarters Moved.—The headquarters of the trachoma eradication work conducted by the U. S. Public Health Service, which have been at Louisville, Ky., were moved, July 1, to Rolla, Mo. Surg. Paul D. Mossman, who will continue in charge of the work, has been directed to proceed, with commissioned personnel and other employes, to such places in Ohio, Indiana, Illinois, Kentucky, Tennessee, Arkansas, Missouri and Minnesota as may be necessary for the proper conduct of trachoma prevention work.

Chiropractors Reject Code of Ethics.—The convention of chiropractors of the east, whose session ended at Atlantic City, June 28, rejected the proposal of a committee for a code of ethics for that cult. The reason was, according to the Atlantic City *Press*, that, since the cult is comparatively new, "a regulatory formula at this time might be injudicious." One of the regulations of the proposed code of ethics, it is said, would prohibit one chiropractor from treating a patient known to be under the care of another chiropractor unless he should happen to know that his brother practitioner is a professional inferior. This was strongly opposed.

Hospital Association Employment Bureau.—The board of trustees of the American Hospital Association has inaugurated an expansion of the employment bureau of the association which has been maintained for the benefit of its members. The bureau will operate now on a business basis, the actual cost of the work of the bureau being deferred by those who secure positions through its efforts. Mr. Asa S. Bacon, superintendent, Presbyterian Hospital, Chicago, Dr. Arthur C. Bachmeyer, superintendent, General Hospital, Cincinnati, and Dr. William H. Walsh, executive secretary of the association, have been assigned to formulate regulations to conduct this work.

Immigrants' Examination at Foreign Ports.—The new arrangements of the federal government to determine whether or not medical and eligibility examinations of immigrants may be performed successfully at embarkation ports began with the departure from New York of immigration inspectors to act as technical advisers to consuls in seven European ports. The Secretary of the Treasury has also assigned public health surgeons to act as medical examiners at the consulates at London, Liverpool, Southampton, Glasgow, Belfast, Dublin and Cork. By examining prospective immigrants prior to isuing passports, the government hopes to reduce to a minimum the number turned back at the ports of debarkation after they have made the trip to the United States. If the experiment now begun proves successful, it will be extended at a later time to other European ports.

Child Welfare Legislation.—There was a decrease in the amount of child welfare legislation introduced in the forty-two state legislatures that met this year, compared with 1923. According to the Children's Bureau, Washington, D. C., a children's law commission was created by Rhode Island, the Pennsylvania and Delaware commissions were continued for two years, the Utah and New York state commissions have been discontinued. The South Dakota commission introduced ten bills, four of which passed in amended form. The maternity and infancy act was accepted this year by Rhode Island, Vermont and Hawaii, making a total of forty-three states and Hawaii that cooperate under the act. The child labor amendment was rejected by both houses in eighteen states, two other states having done likewise in 1924; one house in each of seven other states rejected it (one other in 1924). Bills to raise the standards of child labor were rejected in New Hampshire, North Carolina, New York, Rhode Island and Wyoming. Oregon passed a law requiring the physical examination of all school children during the first month of the school year, provided the parents do not object. Bills relating to mothers' pensions were introduced in a number of states; South Dakota passed a law making the existing mothers' pension law applicable to unorganized counties; North Carolina cut its mothers' pension appropriation from $50,000 to $30,000, and North Dakota passed a law making more strict the procedure through which pensions are obtained. Other legislation affecting child welfare was passed and the information received by the children's bureau from the states is not yet complete.

FOREIGN

Change of Date.—The sixth meeting of the Far Eastern Congress of Tropical Medicine, which was to have met in Tokyo, Oct. 18, 1925, will meet a week earlier than was expected, beginning October 11 and continuing to October 31.

New Medical School in Japan.—The construction of a new department of medicine, to cost approximately 700,000 yen, has begun and will be completed by next March. It will be a four story structure of reinforced concrete, and Dr. Y. Nukada will be chief of the department.

Compulsory Notification of Pregnancy.—According to the U. S. Public Health Service, medical and social leaders of France are demanding that the early notification of pregnancy be made compulsory, so that venereal disease may be detected and the danger to the unborn child prevented.

Personal.—Sir Auckland C. Geddes, former British ambassador to the United States, has accepted the presidency of the British Social Hygiene Council.——Prof. Hans Eppinger of the First Medical Clinic, Vienna, has been called to the chair of internal medicine at the University of Prague.

Association of Donors of Blood.—An association of donors of blood has been formed by the London Scouts and will be known as the "Rovers." On receipt of instructions to report, a "Rover" will go to the hospital in need of his service, his blood having been previously tested. A free day and night service is maintained. Any loss of wages will be recompensed by the blood transfusion service.

Antiquackery Exposition.—The German Antiquackery Society has organized a permanent exhibition in the Kreuzberg district to educate the public as to the dangers of quack practices. It is installed in the museum for social hygiene, and is appealing for the loan or donation of articles, quacks' prescriptions, and other data to promote the aims of the exposition. The address of the society is Motzstrasse 36, Berlin-Wilmersdorf.

Informal Association of Instructors in Roentgenology.—After the World War, a committee of university instructors in roentgenology was formed in Vienna to exchange experiences and study the progress made. The idea has found favor, and in response to letters, sixty-one university instructors have contributed literary and statistical material, including instructors from Germany, Austria, Russia, Roumania, Switzerland, Hungary, Jugoslavia and Czechoslovakia. All university instructors in "medical roentgenology" who have not yet received this letter are invited to participate in the work. The announcement says that through the collection, at a central point, of information on the progress of roentgenology, outlines of courses, lists of instructors and other things, further progress would be stimulated. The names of the organizing committee comprise those of Professors Holzknecht, Haudek, Kienböck and Weber.

Proposed Medicolegal Institute.—At the annual meeting of the Medico-Legal Society at the Royal Society of Medicine, June 23, under the presidency of Lord Justice Atkin, a resolution was unanimously adopted "that this meeting expresses its general approval of the proposal for establishing a medicolegal institute and requests the committee to take such steps as it may think necessary to develop the proposal in cooperation with all interested parties, with power to add to its number." Lord Atkin said, according to the *Lancet,* that no one who had had anything to do with the administration of justice in England could fail to appreciate the extraordinary importance of the proper development of medicolegal learning in reference to securing that justice is done; no session of any criminal court was ever held where topics of the greatest medicolegal importance were not introduced, and hence where it was not of the utmost importance that highly informed expert advice should be placed before the court. The committee will report to the society from time to time when definite results have been obtained.

Deaths in Other Countries

Robert Henry Scanes Spicer, Chelsea, England, president of the section for nose, throat and ear disease of the British Medical Association in 1900, and a frequent contributor to medical journals, June 18, aged 68.

CORRECTIONS

Date of Graduation.—The Journal, July 4, p. 44, erroneously noted the age of Dr. George David Stewart as 89. Dr. Stewart graduated from medical school in 1889.

Number of Typhoid Carriers.—The number of typhoid carriers in the state of New York, noted in The Journal, July 4, p. 43, does not include those which are in New York City.

Government Services

Health of Troops Abroad

For the first seventeen weeks of 1925, the troops of the army stationed in China had the highest admission rate for disease and those in Hawaii the lowest. The troops in Panama had the highest rate for injury, those in China second, in the United States third, and in the Philippine Islands the lowest. The apparent reason for the excess admission rate for disease in China, according to the Surgeon General's office, was, as usual, the exceedingly high rate for the common respiratory and venereal diseases. The admission rate for venereal disease in China was more than twice as high as that for troops in Panama, which was second; the Philippine Islands was third, the United States fourth, and Hawaii the lowest. The rates for the common diarrheas and malarial fevers were highest in the Philippines and second in Panama.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 27, 1925.

The Prevalence of Dental Disease

The forty-fifth annual meeting of the British Dental Association has been held in London. Dr. Badcock, in his presidential address, spoke of the alarming prevalence of dental disease. The educated public was beginning to realize how grave were the effects of diseased teeth and gums on general health, but there still remained an appalling sense of indifference and neglect. Diseases of the teeth and gums not only gave rise to indigestion and malnutrition by making efficient mastication difficult or impossible, but did even more serious harm as sources of bacterial poisons. In the opinion of the Prudential Insurance Society, with a membership of 3,000,000, neglect of the teeth was the cause of half the ill health found among the industrial classes. Mr. F. D. Acland, chairman of the dental board, had stated that 86 per cent. of children in the elementary schools of England and Wales—and there were between six and seven millions with something less than 500 dentists to care for them—suffered from bad teeth. In some parts of the country it was 96 per cent., with an average of five bad teeth per child. At least 85 per cent. of the population under 20, and an increasing percentage over that age, were sufferers from dental disease. There was a higher incidence among women than among men. Dental disease was to be found among all civilized peoples, but we in these islands undoubtedly exhibited a bad preeminence. Taking in conjunction with the widespread prevalence of oral disease, and the variety and gravity of its effects, it was evident that we were face to face with a problem of the first magnitude. Dental disease was sapping the strength of the nation no less seriously than was venereal disease. A very small percentage of the food eaten today, especially by the poorer classes, was fresh and untreated chemically. Cheap sugar and white bread were modern products, and there was an enormous and progressive increase in the consumption of sweetmeats, biscuits, sweet cakes, jam and marmalade—compounds that adhered to the teeth and gums and fermented with great rapidity. So today the population lived largely on food injurious to the teeth by reason of its physical properties and chemical composition, and deficiency in certain components. This wrong feeding often began with the baby deprived of its mother's milk. The remedies for gum and tooth disease alike were right diet and a clean mouth.

The Ethics of Birth Control

Birth control has become one of the burning topics of the day for politicians, social reformers and religious leaders. It is the subject of lectures and debates. A book advocating it has had an immense circulation and has been followed by a book attacking it. The latest publication on the subject is "The Ethics of Birth Control," a report issued by a special committee appointed by the National Council of Public Morals. The history of the inquiry goes back to 1913, when, with official recognition, the National Council of Public Morals established the National Birth-Rate Commission. This commission made important investigations and issued three reports. The special committee was appointed as a result of these investigations. It had as president the Bishop of Winchester and consisted of men and women in various walks, including clergymen, physicians and social workers. Among those who gave evidence before it were Lord Dawson (physician), the Bishop of Guildford, Mr. Harold Cox (politician and economist), Lady Barrett (physician) and Miss Maude Royden (preacher). An important passage in the report is as follows:

> Broadly speaking, our generation is too much occupied with problems of sex to see calmly and clearly. This is due in part to reactions—some of them very healthy—from Victorian conventions, in part to the new interest in sex from the psychological standpoint, and in part to the fundamental change of attitude as to woman's position and work which the last half century has seen.

The committee explains that it deals solely with the ethics of birth control within the married state. A Christian outlook is assumed, which means that:

> Life is lived with a background of eternity; the formation of character concerns our future as well as our present existence; self-gratification is not the true purpose of life; the family is a divine institution.

Normally, the committee thinks that each couple should look forward to a family of four or five children at the least; but it has sympathy for persons in straitened circumstances who resort to contraceptive methods in fear of grave difficulties of bringing up a family of even moderate size. It deprecates, however, the exaggerated notion of some parents as to the best method of attaining their ideals of education, who assume that a public school and a university education are necessary. The committee recognizes as more serious drawbacks to parentage the high cost of living and the inadequacy of house room. Nor, seeing that prudence dictates the regulation of the size of the family by the resources, is it surprised that many have had recourse to conception control. The main conclusions of the committee are as follows:

1. The comparatively modern practice of conception control, and in particular the artificial methods, call for fuller investigation from the medical, economic and religious standpoints.

2. The use of contraceptives is a symptom of the artificial character of our civilization whereby for large numbers a normal married life is difficult and in some cases all but impossible.

3. In numerous cases control of conception, apart from the question of the methods, is medically necessary and economically advisable, but all the circumstances should be weighed in the light of the best available scientific and ethical counsel.

5. While there are persons approaching the matter from the highest motives in whose judgment the use of contraceptives is justifiable, the practice opens the door to grave social perils, and a serious responsibility lies on married people who adopt it.

6. Our knowledge is not such as to justify either the advocacy or the condemnation of these means on the ground of alleged dangers of overpopulation; but within the British Empire the time is ripe for a campaign of empire-settlement and redistribution of population.

7. The weightiest argument for birth control is found in the economic circumstances (wages, inadequate housing and the like) of many.

8. The capacities for self-control, especially in young persons, are often underrated, and their training in this respect, as also in the ideals of married life, is a primary duty.

Some of the clerical members of the committee, while in cordial agreement with the greater part of the report, express the reservation "that the use of contraceptives is a frustration of God's design in nature" and unjustifiable in any circumstances. A medical member (Dr. C. J. Bond) thinks that the wider use of contraceptives by the more educated and prosperous classes may exercise a dysgenic effect, though future conditions may necessitate control of the "output of human life." Sir Hermann Gollancz (professor of English literature) signs the report but notes that there are points to which, as a Jew, he cannot subscribe. The failure of the committee to formulate definite conclusions, in spite of considerable labor, is noteworthy.

A Rebuff to Calcutta University

The General Medical Council has decided to withdraw the recognition hitherto given to the M.B. degree of Calcutta University. The action of the council marks the culmination of a protracted dispute between it and the university authorities. Five years ago, the council addressed Calcutta University on the need of improving the practical midwifery course, and intimated that recognition of the Calcutta M.B. degree depended on how far that university was able to satisfy the council on this point. From time to time, improvements were introduced to facilitate practical training in midwifery, but not such as to satisfy the council. In 1922, Colonel Needham, the inspector on behalf of the council, asked permission to inspect for the final M.B. examination of Calcutta University. This request was refused, and the sequel was the intimation that the medical council's recognition of the degree would be withdrawn as from November, 1924. The reason given was that the council, having been refused facilities for inspection, was unable to judge whether training was of a sufficiently high standard to justify recognition of the university's degrees. The point is being raised that the council was not entitled to withdraw recognition, which was not based on the right to inspect examinations, but simply on the principle of reciprocity.

Failure of Maternity Benefit in Australia

During the first eleven years of the operation of the Commonwealth Maternity Allowance Act, nearly $38,750,000 was paid to mothers in Australia as the $25 baby bonus. Practically every woman who has had a viable child since July 1, 1913, has claimed the bonus. The royal commissioners, in their report on national health insurance, call attention to the fact that the puerperal mortality and the infantile mortality have remained practically undiminished between 1905 and 1924. The former is given as 5.1 per thousand registered births; the latter is given as 60.5 per thousand births. In 1913-1914, 64 per cent. of the mothers were attended by physicians, and in 1923 and 1924, 79 per cent. In spite of the material increase in the frequency of attendance by physicians, the puerperal mortality has not diminished. Thus, like other socialistic schemes, the maternity bonus has failed in its objective. The Federal Committee of the British Medical Association in Australia has suggested certain remedies for the waste of maternal life and health and for the sacrifice of infant life. These include the better training in obstetrics of medical students and nurses, the extension of maternity hospitals, antenatal clinics and infant welfare centers and the provision of help for mothers and expectant mothers in necessitous circumstances. The commissioners now recommend an extension of the bonus system in a slightly changed form. They suggest that female insured persons and the wives of insured men should receive $5 a week for two weeks before and for four weeks after confinement. The *Medical Journal of Australia* comments editorially on the results of the maternity benefit and questions whether health departments should be charged with the supervision and direction of maternal hygiene.

The Imperial Bureau of Entomology

The second Imperial Entomological Conference has been held in London. More than twenty of the oversea governments sent delegates to the conference. There were papers and discussions on entomologic subjects of a general character, such as "The Influence of Natural Migration on Outbreaks of Pests," "The Aims and Organization of Economic Entomology," "The Education and Qualifications of an Economic Entomologist," and "Coordination of Effort in Tsetse-Fly Investigations," as well as subjects of a more specialized and technical character. The conference was summoned by the secretary of state for the colonies at the instance of the Imperial Bureau of Entomology, acting on a resolution passed at the conference in 1920 that such meetings should be arranged every five years. It is sixteen or seventeen years ago that the authorities of the colonial office said, "We have discovered that insects are more important than languages"; and after some important discussions, a tropical African entomologic research was set up. The work done has been considerable. During the past year the number of insects identified has exceeded all records. The total number of collections received was 347, sent in by 134 different correspondents, of which those in Africa head the list with forty-two. These collections contain 63,700 specimens, of which 8,600 are blood suckers. The investigation of these large collections involved the preparation of 275 lists of identification, comprising more than 8,000 specific names. All type specimens are presented to the British Museum, which last year received 247 species new to science and nearly 400 species not till then represented in the national collection. The bureau issues monthly the *Review of Applied Entomology,* in two parts, one dealing with insects that attack plants, the other with insects that attack man and other animals. The review includes 900 British and foreign publications, and all papers with reference to injurious insects, in any known civilized language, are abstracted. In the year just ended, 2,500 abstracts were published. The bureau from time to time issues separate monographs, such as that on the tsetse-fly, by Major E. E. Austen and Mr. E. Hegh. It also publishes quarterly the *Bulletin of Entomological Research,* which contains original papers of the utmost importance to all engaged in fighting insects. The library is a large one, containing more than 4,000 bound volumes and nearly 8,000 pamphlets, and the classified card index now comprises 36,000 cards. A recent development is the breeding of beneficial parasites for shipment overseas with a view to the control of some insect pest that has established itself where no local parasite is discoverable. Special parasites have thus been successfully introduced into New Zealand and Nigeria, but there is much scope for expansion in this direction, if the necessary funds are available. Among the insect pests to which the bureau has directed attention, probably the most important is the tsetse-fly, which conveys trypanosomiasis to man and the deadly disease nagana among domestic stock. From the Sudan to Barotseland fly areas exist, and similar patches are found in southern Rhodesia and Zululand. Unfortunately, these patches are continually expanding. In the year 1923 the fly encroached in no fewer than seven places in one subdistrict of Tanganyika, and the Abercorn cattle district in northeastern Rhodesia is now surrounded by infested areas. Similar instances can be cited all over tropical Africa. The problem in its magnitude is overwhelming. So serious is the matter that the health section of the League of Nations has interested itself in it, and recently a conference was held between representatives of Belgium, France, Great Britain and Portugal, with the result that proposals have been drawn up for an international commission to set to work in Uganda on the medical side of the problem.

PARIS

(From Our Regular Correspondent)

June 23, 1925.

Prophylaxis of Leprosy in Indo-China

In a recent number of the *Presse médicale,* Medical Inspector Audibert, director of the Service de Santé in Indo-China, gives an interesting account of the prophylactic methods employed against leprosy. The total number of lepers registered in Indo-China for the year 1923 was 5,813, of whom 4,454 were interned in leprosariums or segregated in villages; 283 were placed under administrative supervision; 956 had escaped and had not yet been apprehended, and 301 had been arrested but had not yet been interned. The ethyl esters of chaulmoogra oil are used at present in all the colonies of the federation. They are prepared in Cochin China, Cambodia and Annam from the seeds of *Hydnocarpus anthelmintica,* which is grown by the agricultural service. The addition of iodin has been discontinued, as it renders the intramuscular injections too painful, without increasing their efficacy to any great extent. The following technic is employed: The first week, 1 c.c. is injected; the second week, 1.5 c.c.; the third week, 2 c.c., and so on until a dosage of 5 c.c. has been reached. The patient is given also a tonic and mineral salts. The results secured are sufficiently favorable so that lepers frequently ask for injections whereas formerly they rebelled against treatment.

In the beginning a marked improvement in the general condition is noted, while the cutaneous lepromas, the ulcerations, and the perforating maculae retrogress perceptibly. After a time the improvement becomes slower, *Bacillus hansenii* seeming to adapt itself to the drug. Sometimes the treatment causes a temporary exacerbation and certain unfavorable symptoms, not of any particular importance but occasionally discouraging the patient.

Besides the ethyl esters of chaulmoogra oil, the natives employ a base of hydnocarpus and krabao, which is also efficacious. This treatment is given in the form of pills which contain numerous substances and which are willingly taken by the natives in spite of the gastric troubles they occasion. The partial therapeutic success does not lessen the imperative need of the isolation of the leprous. Domiciliary treatment has yielded deplorable results. Patients disappear never to return, in spite of their promises and threats of internment. Hospitalization does not seem to be just the right course; for, in so doing, there is danger of keeping other patients away, through fear of infection. Furthermore, hospitalization is very burdensome, since the treatment usually extends over a prolonged period. It is the unanimous opinion that the permanent restraint of the leprosarium is still needed. But, in order that such restraint may be less draconian and may be made as endurable as possible, the plan has been launched in Annam of establishing segregation villages such as had been created in New Caledonia. These villages, seven of which have now been provided for Annam, are intended for lepers who, for various reasons, cannot be isolated at home. Especially infectious cases, recalcitrant patients, the mutilated and the indigent are interned in these villages. Other patients are allowed a measure of liberty but are constrained to follow the prescribed treatment. The advantages of such an organization are evident: a more normal community life together with suitable employment, isolation of the infectious and the possibility of consistent treatment.

The adoption of the plan of segregation villages will, of course, result inevitably in an increase of the number of births among lepers. The usage in Indo-China permits a family to adopt the child of a leprous mother, provided the child is taken away from the mother within forty-eight hours after birth. But the infant will thus be deprived of its mother's milk, and either it should be provided with a wet-nurse, as the Assistance publique in France endeavors to do under such circumstances, or infant homes should be created.

The Immunization of Groups with Diphtheria Anatoxin

Antidiphtheric vaccination carried out with the Ramon anatoxin (diphtheria toxin treated with formaldehyd and deprived of its harmful properties but preserving its immunizing power and its flocculent capacity in the presence of antitoxin) is becoming more widespread and has been discussed in a number of articles. Recently, L. Martin, G. Loiseau and A. Lafaille took up the question before the Société médicale des hôpitaux de Paris and emphasized certain points. They had collected observations on 1,297 vaccinations in various groups.

In order to secure good immunization, the injections must be given at intervals of several weeks. At least two weeks should elapse between two injections, and the results are still better with intervals of three weeks. The first injection is preparatory and does not constitute a vaccination. The second injection is, therefore, indispensable. A third injection is needed in certain very receptive subjects. Ninety-eight of the persons vaccinated became immune. Children bear the vaccination well, and they are the persons who should be vaccinated. In children it is not necessary to give a Schick test.

In adults who react more vigorously, it is well to detect the immune and the sensitive and to reserve vaccination for the sensitive. M. Zoeller of Val-de-Grâce, who has written some interesting articles on the question, first applies an intradermal test with dilute anatoxin, which shows the sensitiveness of the subject and protects hypersensitive subjects against troublesome reactions. It would not seem necessary to eliminate more than 0.5 per cent. in applying vaccination to any group.

The Memorial in Honor of the Members of the Faculty of Medicine of Paris Who Fell During the War

The Faculté de médecine of Paris dedicated recently the memorial erected in honor of its fallen heroes. This memorial, a bas-relief affixed in the grand vestibule of the main building of the faculté, is the work of M. Raoul Bénard. It is of noble simplicity, and represents a young physician of the army medical corps viewing thoughtfully a rural landscape devastated by shells and dotted with the graves of the dead, while litter-carriers are transporting the wounded through the side trenches that lead to the first-aid station. On the bas-relief are engraved the names of nearly 500 students and physicians of the Faculté de médecine of Paris who died for their country during the Great War. The list of names is surmounted by the following inscription engraved on the stone:

FACULTAS PARISIENSIS EREXIT, SUORUM MEMOR—1914-1918

This memorial was erected with funds raised by a popular subscription launched by the Société des amis de la Faculté de médecine. Generous subscriptions were sent in from all corners of the world. The dedication took place in the presence of the president of the republic.

MADRID

(From Our Regular Correspondent)

May 27, 1925.

Levaditi on Epidemic Encephalitis

Dr. Levaditi of the Pasteur Institute of Paris has given several popular lectures at the French Institute of Madrid on what he calls neuro-ectodermal diseases. These include rabies, infantile paralysis and epidemic encephalitis. Most of those in the audience were women. As usual in Madrid, few physicians attended. The first lecture on poliomyelitis was introductory to the second, epidemic encephalitis.

Epidemic encephalitis, he asserted, has caused 1,500 deaths in Paris and 10,000 in the whole of France. It is caused, as poliomyelitis, by a filtrable and invisible virus. Following the method used in poliomyelitis and other diseases produced by invisible viruses, encephalitis has been studied through the fixation of the virus in experimental animals. In the first study made in the Pasteur Institute, with the virus from the brains of Vienna patients, the disease could not be reproduced in the monkey. After trying other animals, the rabbit proved the one suited for the purpose. This has permitted the isolation of the fixed virus. In rabbits, after a four or five days' incubation, fever appears, and following a brief period of restlessness, the animal shows the somnolence that characterizes the disease in man. The virus has been isolated from the locus niger, where the center of sleep is located. The lesions consist of perivascular inflammation and neurophagia. It seems strange that all these filtrable viruses show predilection toward certain parts of the nervous system. For instance, the virus of poliomyelitis lodges in the cells of the anterior horns of the medulla; that of encephalitis in the cells of the locus niger, and that of rabies in those of Ammon's horn. Another peculiarity common to this virus and that of rabies is that its germs occasionally join cellular elements and then show affinity for acid dyes.

Levaditi described the researches that identified the virus of epidemic encephalitis with that of herpes. This work began with an observation of Levaditi himself, but the conclusions were drawn by other scientists. Encephalitic virus, as well as the rabic virus, spreads along the course of nerves. In the Pasteur Institute, the virus is frequently implanted in the cornea, and if the nerve is severed and isolated, the animal does not show encephalitis. In one case, the cornea was abraded in order to rub in the virus, and instead of the usual infection, a keratitis appeared. This fact would have been neglected had not some one found, in studying the herpes virus, that it also belonged to the invisible and filtrable strains. In studying further the probable similarity, the two viruses were found to be identical. The herpetic virus seems to be an attenuated encephalitic germ. This conception is very significant, since it suggests a series of attenuated or exaggerated degrees of virulence, marking the path from one disease to the other. Steps were taken to find the localization of the herpetic virus. In a young woman who, each spring, developed herpes on the dorsal surface of the forefinger, the skin of the finger was removed and replaced with skin from the abdomen. When Levaditi was in Madrid, a telegram arrived stating that the girl had developed the usual outbreak of herpes. The germ could not be in the skin, as this had been removed. It seems necessary to accept that the germ lodges in the nervous system.

Encephalitis, as well as poliomyelitis, spreads through the upper air passages. The virus then involves the nerves and brain and also makes its way to the saliva and nasopharyngeal discharges. Through these, new subjects are infected. If the mucous membrane is healthy, it resists the implantation of the virus; but if there is inflammation, the germ is able to enter the body. Dr. Kling of Sweden, in some recent studies, reached different conclusions as to etiology. According to him, the cause of the disease is a microscopically visible germ. He was so conclusive that the scientists of the Pasteur Institute felt compelled to repeat his experiments. Their results were very interesting. It was found that Kling had used unawares an infected rabbit. What he had taken for the encephalitic germ was the germ the rabbit already harbored when the encephalitic virus was injected. This germ is the cause of a microsporidiasis. This, strangely enough, is the disease that destroys the silk worm, so well known to Pasteur. The germ, encephalitozoon, has thus caused the first reported microsporidiasis in mammals.

Advances in the Study of Smallpox Vaccine

Another of Levaditi's lectures dealt with neurovaccine. In his introduction, Levaditi reviewed briefly the history of smallpox. Two centuries ago, the disease caused 800,000 deaths every year. Smallpox occupied the sixteenth place among the causes of death. Before Jenner, the only protection was by inoculation. Jenner showed that cowpox protects against smallpox. Here is another proof of the old saying that "no one is a prophet in his own country." England is precisely the country where they have been most backward in enforcing vaccination against smallpox. For more than half a century, vaccination has been compulsory in Germany.

A thorough study of smallpox and its causative virus, which is also invisible, and of cowpox and vaccinia, seems to suggest that the three are identical. In his studies of smallpox, Calmette gave an impetus to vaccination, the consequences of which may be far reaching. The smallpox vaccine is obtained from the pustules in the abdominal skin of the calf. Calmette noticed, in injecting the vaccine intravenously in the rabbit, that if the abdominal area had been previously shaved, the vaccine pustules would develop there. On the other hand, Pirquet, in vaccinating the same subject repeatedly, saw pustules appear for three days, but after the third day the vaccine did not "take" any more. In three days, therefore, immunity had developed. This phenomenon, which Pirquet called allergy, was one of the starting points for our knowledge of the phenomenon of anaphylaxis discovered by Richet. Negri was the first who succeeded in filtering the smallpox virus. Thus, smallpox virus, resembling that of epidemic encephalitis, poliomyelitis and rabies, is also invinsible and filtrable. Heat may damage it, a disadvantage that proves very serious in tropical countries. In the Pasteur Institute, they have succeeded in preparing the vaccine in a dry powder. Dr. Borrell noticed that when the vaccino was inoculated in the cornea, the virus becomes fixed in its cells and forms granules which take some stains. For convenience, the cornea is placed on a slide, on which the cells show after staining.

In view of the many resemblances between the virus of smallpox and those of poliomyelitis, encephalitis and rabies, all of which involve the central nervous system, Levaditi wondered whether the smallpox virus might also become fixed in the nervous system. His first experiments proved negative, but after a change of experimental animals he succeeded in showing that smallpox virus shows a predilection toward the central nervous system. After several days' incubation, it causes a process in the brain of the rabbit, which ends in paralysis. For a century all efforts to purify smallpox vaccine have proved fruitless. Cultures in the brain of the rabbit will be pure, as any other germ would cause a rapidly developing encephalitis, very different from a smallpox infection. This pure vaccine from the brain of the rabbit is the so-called neurovaccine. In this connection, Levaditi repeated again, "no one is a prophet in his own country." In France, neurovaccine has not found much acceptance. However, in Spain, Dr. Gallardo of the Alfonso XIII Institute has repeated the experiments and has manufactured a million doses. The method presents several advantages, among which are the purity of the product and its small cost. Its potency is the same as that of the current smallpox virus.

After studying for many years the action of germs on the different tissues, Levaditi has divided them all into visible and invisible. A surprising fact is that visible germs attack mesodermal tissues, while invisible germs become fixed in ectodermal structures. His experiments in the Pasteur Institute suggest that an injury is needed for the growth of smallpox in the tissues. This trauma permits the development of cells, which the virus attacks more readily than normal adult cells. This is precisely what happens with cancer cells and radium, which acts especially on rapidly growing cells. Then smallpox virus was tried in experimental cancers. In some cases the changes resembled those produced by radium.

Tribute to Dr. Piñerua

As stated in a previous letter, Dr. Piñerua, professor of general chemistry in the Madrid Medical School, gave his farewell lecture some months ago. Quite a number of his former and present pupils attended the lecture. Several of them have now collected in a large volume a number of his papers. The book was presented to him in a solemn session held in the assembly hall of the National Academy of Medicine. The audience was not so large this time as on the previous occasion but contained prominent representatives of the medical, pharmacy and science schools. A number of speeches were made. In his capacity of a retired professor, Dr. Count de Gimeno was one of the speakers. Dr. Piñerua was also retired because he had reached the age of 70. It seems a pity that professors, still active, as Dr. Piñerua, Cajal and Count de Gimeno, should be compelled to retire. The measure, however, became a need through the fault of the professors themselves. Rather than leave, all of them used to submit certificates of efficiency. The situation finally became such that no professor ever retired. The universities were thus filled with old teachers whose only claim to respect was their senility. Perhaps it would be a good thing to have a system similar to the one prevailing in France. There any professor still capable may give postgraduate or research courses but must remain free of routine teaching.

VIENNA

(From Our Regular Correspondent)

June 26, 1925.

Opportunities in Vienna for Postgraduate Medical Study

Special consideration has been given this year, in the courses of instruction in the medical department of the University of Vienna, to physicians who are not associated with a large hospital but are located in small towns. Every quarter, a short course of from one to two weeks is given by the most eminent clinicians. This intensive course occupies six hours a day (from 8 to 12 and from 4 to 6). To this course all graduate physicians, including those from foreign countries, are admitted on payment of a small fee. Furthermore—during the summer months—four-week courses on selected chapters of surgery, materia medica, medical chemistry, gynecology, otorhinolaryngology, dermatology and ophthalmology, especially adapted to foreign physicians, are given. Then, four times a year, field trips are organized, which afford foreigners an opportunity to become acquainted with the hospitals in Vienna and also with some of the adjacent resorts, such as Baden and Semmering. For physicians who can make a more protracted sojourn in Vienna (from two to six months), an opportunity is offered, in the clinics and hospitals, to take regular courses in almost every subject of medicine and to take temporary charge of a number of beds. For many, however, what they can see and learn in the laboratories and the institutes is of equal importance with the courses and the clinical experience. Undergraduates from eastern and southeastern Europe are subject to certain reservations, for the reason that the university facilities for this class of students are limited. The number of cadavers for anatomic dissection is not large, so that the first-year medical students have scarcely enough material for dissection. Foreigners are therefore not admitted to the beginning classes in medicine until all Austrian students are provided for. But these restrictions do not affect the graduate courses. A special committee on studies (*Studienkomite*) has been appointed to aid graduate students in the selection of courses.

Death of Dr. Josef Breuer

Dr. Josef Breuer of Vienna, one of the most eminent physicians of all times, has died at the age of 83. He combined, to a very rare degree, breadth of knowledge with zeal and acumen. He sprang from the same epoch that produced Skoda and Oppolzer, but, owing to differences in religious and political opinions, he was obliged to resign his position as the most prominent diagnostician in the Vienna clinic and to renounce his university career. In view of his extensive private practice, he found it difficult to keep up his scientific researches, but he did so even until the very end, although it cost him many severe struggles. We are indebted to his researches on the semicircular canals in the domestic pigeon for an explanation of the sixth, or static, sense. To him are due also the first stimulative suggestions with reference to psychotherapy, which has undergone such a brilliant development at the hand of Freud. He has given us also a number of excellent treatises on subjects pertaining to diverse fields of medicine. At the bedside of his patients, he was not only an indefatigable counselor and a profound diagnostician but he was also remarkably successful in the treatment of their ailments.

Dr. Helly's Resignation from the Ministry of Public Health

Dr. Karl Helly has resigned as director of the bureau of public health and has retired from active practice, Dr. T. Scherrer having been appointed to succeed him. Dr. Helly was known not so much as a scholar and investigator as he was as a practitioner with an unusual talent for organization. His services have been especially meritorious in developing the public health service, the securing of an adequate and satisfactory supply of drinking water, equipping the vaccination institutes, and in centralized management of the sanitary service. Although primarily a state official, he has always shown a friendly consideration for the interests of the medical profession as a whole, so that his voluntary retirement, after he reached the age of 70, is regretted by his friends and associates.

BERLIN

(From Our Regular Correspondent)

June 27, 1925.

The Biologic Importance of Small Amounts of Inorganic Elements

Professor Spiro of Basel was invited to deliver the Leyden lecture, founded a number of years ago at the suggestion of Professor Schwalbe in memory of Professor Leyden, and he gave an interesting address on the biologic significance of small amounts of inorganic elements in the organism.

For much of the progress in this field we are indebted to the Americans, especially for the feeding experiments with synthetic foodstuffs. Our knowledge of the deposits in various parts of the body is slight. It is also difficult to keep out impurities in the synthetic experiments; nor is too high a degree of chemical purity of foods always an advantage. Pure sugar lacks many useful ingredients present in syrup. In other fields as well, cultural developments give rise to many peculiar observations. It would not be difficult for capitalism to secure a monopoly of mercury and other rare substances. We hear that in America it has been discovered that the addition of tetra-ethyl lead to gasoline makes it go further when used in automobiles. But, at the same time, a fine lead spray is thrown out into the air. It has been figured out in Zurich, Switzerland, that the general use there of gasoline containing tetra-ethyl lead would yield a deposit of 10,000 kilograms of lead a year. Incidentally, it may be stated that the manufacture of this substance has increased the price of bromin fourfold.

Copper, the use of which in preserves is prohibited in Germany on account of its toxicity, is found in the blood of some Coelenterata. In America, investigators have found in human milk a considerable quantity of copper, which is probably an effect peculiar to the character of the civilization, since copper is found in many fertilizers used in the United States. Metallic copper is easily dissolved in most fluids in the presence of oxygen, and combines then just as easily with albumin. This will explain the observation made during the war that in penetrating gunshot wounds the tissues surrounding a copper projectile remain free from bacteria. It is well known that silver kills gonococci and that gold destroys tubercle bacilli; the causes of this action need to be investigated further. Midway between barium and calcium (which occurs in considerable quantities in the body and is also the base of many remedies) we find strontium.

Zinc belongs to the same series; Professor Rost of the federal health service has established that 1.3 mg. is contained in a liter of milk. Apparently zinc exerts some influence on normal growth. It is found especially in the prostate, in the male germ cell and in the placenta; occasionally in malignant tumors. When zinc was added to the feed of animals which was free from vitamins it had a favorable effect. Possibly we shall discover that the so-called vitamins are chemically much simpler substances than we have assumed.

Silicon also plays an important rôle. When the chemist finds it present, he fears a contamination, since dust consists mainly of silicon. But it occurs in the living organism. Although in sea water it is found only in a dilution of 1 : 200,000 up to 1 : 500,000, many diatoms contain as much as 80 per cent. silicon. It is found also in hair, feathers, and in the pancreas. In tuberculous persons one finds in the ashes of the pancreas scarcely half and in cancer patients a great excess of the normal content in silicon.

The toxic effect of lead is well known. It appears that lead in the organism attacks mainly the lipoids. How does it come, however, that some persons are so much more susceptible to lead poisoning than others? There appears to be an internal and an external cause. Spiro has shown that considerable quantities of epinephrin favor the migration of lead into the vessel walls. He has also shown that the ingestion of alcohol has the same effect and that alcohol and epinephrin are coadjuvants.

The toxicity of arsenic is well known; also that persons can accustom themselves to large quantities. This is due to the fact that the intestine absorbs only a certain quantity of arsenic. If the excess of arsenic is injected into the blood stream, the metal is normally toxic even in so-called "arsenic eaters." It has also been established that arsenic occurs normally in small quantities in the body.

Researches have brought also new knowledge of sulphur. Water containing sulphur has an effect on the mineral metabolism of the body.

In the interior of a country and in sweet waters the quantity of iodin that occurs is very slight. In the sea water it its greater; the most iodin is found in bathing sponges. When there is more iodin in the soil, more enters into the composition of plants and thence is transferred to herbivorous animals. In a certain region in Switzerland with a 10 per cent. incidence of goiter, 276 units of iodin were found in a liter of milk; in another region with a 60 per cent. incidence of goiter, only 73 units.

In projected photographs, Spiro showed the importance of the inorganic substances in the body. Microscopic preparations of great delicacy were heated to over 500 C. so that all the protein and all the organic substances were destroyed. Only the inorganic structure was left. But one could easily tell from the appearance of the preparations whether it was a specimen of the liver, the kidney, the blood vessels, etc. It is apparent, therefore, that, in the last analysis, the inorganic substances are of paramount importance for the delicate structure of the organs.

University Study in Germany

After the close of the war, there was a greatly increased attendance at all the higher institutions of learning. The increase was most marked in the agricultural colleges but was observable also in the technical and commercial schools. The result has been an overcrowding or at least an ample filling of all the professions presupposing academic study and preparation.

The number of university students, which before the war had ranged around 60,000, shot up to 90,000 but has now fallen to 68,827. There are 7,474 women students and 12,000 foreigners (including students of German extraction) among the number. The technical schools, which before the war had an attendance of 12,000, and for the winter semester 1923-1924 of 27,000, have now 23,507 students enrolled, 400 of whom are women.

There are 2,048 students of evangelical or Protestant theology (in 1914, 4,370); 1,755 students of Catholic theology (2,050); 17,769 students of law (9,840); medicine, 9,263 (16,048); dentistry, 1,275 (976); philosophy and philology, 9,911 (14,000); mathematics and natural sciences, 8,127 (8,132); pharmacy, 1,553 (1,100); political economy and political sciences, 16,230 (3,836); forestry, 456 (200).

The fact that the medical profession is overcrowded will account in part for the marked decrease in the number of medical students, but the professional outlook for lawyers and jurists will not justify the large number of students of law. The fourfold increase in the number of students of political economy is so great that the profession threatens to be flooded.

The technical schools show the following distribution of students: architecture, 1,412 (as compared with 2,193 in the summer semester of 1914); construction engineers, 2,385 (as against 2,767); mechanicians and engine builders, 7,463 (3,118); electrotechnology, 4,945 (1,307); mathematics and natural sciences, 3,380 (1,544); mining and foundry, 1,129 (576); shipbuilding, 270 (234); general culture subjects, 2,328 (493).

Since the war, the relative attendance at the various universities has undergone considerable change, which is due, in part, to the founding of three new universities in Frankfort-on-the-Main, Cologne and Hamburg, respectively, and, in part, to the loss of Strasbourg. In spite of these new universities, Breslau, Münster and Würzburg show a considerable increase in attendance, though the universities of Bonn, Göttingen, Greifswald, Halle, Freiburg, Heidelberg and Leipzig, and, more particularly, Kiel and Marburg, have a smaller attendance than before the war. The attendance at the newly founded University of Cologne is unusually large, 4,161 students having been enrolled for the summer semester 1924, which gives it fourth place among German universities, whereas the universities of Frankfort-on-the-Main and Hamburg, which were founded about the same time, had registered, for the summer semester 1924, only 2,683 and 2,422 students, respectively.

Vital Statistics for Bavaria

The birth rate for Bavaria has been on the decline since 1919. So far, the decrease in the birth rate has been compensated for by the reduction in mortality, with the result that an excess of births over deaths has always been attained. But the limits of such compensation have about been reached. In many rural sections, the number of infant deaths is equal to half of the total deaths, which shows that living conditions as affecting infants are worse in rural regions, on the average, than in the cities. Mortality from tuberculosis shows a reduction, as compared with former years, but the number of new cases of tuberculosis is still very high. For the systematic crusade against tuberculosis, special leagues have been formed, in the activities of which the municipalities, the provincial insurance bureau (*Landesversicherungsanstalt*), and the local and industrial *Krankenkassen* participate. Syphilis appears to be decreasing, possibly as a result of the newly established consultation centers and the educational propaganda. In 1924, there was a marked increase in acute and chronic alcoholism. In the rural districts, artificially induced abortions have been widespread. Of the infectious diseases, not only influenza but also typhoid have been prevalent in epidemic form in some sections.

Marriages

GROVER CLEVELAND WILSON, Lieut. Commander, U. S. Navy, to Miss Eleanor Adelle Freeman of Plattsburg, N. Y., June 23.

MORGAN GILMORE CARPENTER, Elgin, Ill., to Miss Martha Elizabeth Kelley of Marengo, June 22.

ROBERT E. JAMESON to Miss Lucille Howorth, both of Davenport, Iowa, June 30, at Denver.

CLARENCE PRENTICE MAY, New Orleans, to Miss Millicent Halsey of Germantown, Pa., June 25.

CLEVELAND JAMES WHITE, Philadelphia, to Miss Mildred M. Daly of Lincoln, Neb., June 6.

THERON G. YEOMANS, St. Joseph, Mich., to Miss Sadie L. Russell of Wren, Ohio, June 27.

JASPER MEILE MOLSBERRY, Plymouth, Iowa, to Miss Marian Pfeiffer of Burlington, June 10.

CHAUNCEY D. BEEBE, Sparta, Wis., to Miss Esther Putnam of Fort Atkinson, June 5.

REUBEN M. DICKER, Brooklyn, to Miss Mildred Burger of Rockaway Park, June 28.

EMANUEL I. DIAMOND, New York, to Miss Dora Deutsch of Brooklyn, June 30.

Deaths

Lesley Hinckley Spooner ⊕ Boston; Medical School of Harvard University, Boston, 1907; instructor of bacteriology, Harvard University Graduate School of Medicine; formerly on the staff of the Massachusetts General Hospital and St. Luke's Home for Convalescents; member of the American Association of Pathologists and Bacteriologists; and the Society of Americ [illegible]; aged 43; died, June 28, *at the Brooks Hospital, Brookline.*

Charles Elihu Hackley, Scranton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1860; formerly clinical professor of diseases of the eye and ear, Woman's Medical College of the New York Infirmary for Women and Children; for ten years on the staff of the New York Eye and Ear Infirmary; Civil War veteran; aged 89; died, June 15.

Delamar Turner, Jr., Savannah, Ga.; University of Georgia Medical Department, Augusta, 1912; member of the Medical Association of Georgia; veteran of the Spanish-American and World wars; past president and at one time secretary of the Baldwin County Medical Society; formerly county physician; aged 47; died, June 23.

George Beard Roberson, Greensboro, N. C.; Medical College of the State of South Carolina, Charleston, S. C., 1915; member of the Medical Society of the State of North Carolina; served in the M. C., U. S. Army, during the World War; aged 45; died, June 24, of cerebral hemorrhage.

Frederick C. Lehman, Philadelphia; Temple University Department of Medicine, Philadelphia, 1904; member of the Medical Society of the State of Pennsylvania; aged 62; died, June 26, at the Lankenau Hospital, as the result of a diverticulum of the esophagus.

Harry Daigh Carley ⊕ St. Louis; Barnes Medical College, St. Louis, 1902; formerly professor of hygiene and sanitary science at his alma mater; served in the M. C., U. S. Army, during the World War; aged 52; died, June 21, at the Missouri Baptist Sanitarium.

Robert Blee Smith ⊕ Columbus, Ohio; Starling Medical College, Columbus, 1901; veteran of the Spanish-American War; on the staffs of St. Anthony's and Grant hospitals, and Franklin County Sanatorium; aged 43; died, June 14, of epidemic encephalitis.

Collins T. Bedford, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1875; formerly professor of theory and practice and clinical medicine at his alma mater; Civil War veteran; aged 84; died, June 18, following an operation.

Glenn Stewart Evans, Peoria, Ill.; Chicago College of Medicine and Surgery, 1913; member of the Illinois State Medical Society; served in the M. C., U. S. Army, in France, during the World War; aged 34; died suddenly, June 23.

James Franklin Hughes, Larned, Kan.; University Medical College of Kansas City, Mo., 1905; superintendent of the Larned State Hospital; aged 54; died, June 15, at Rochester, Minn., following a long illness.

James McElroy Guthrie ⊕ Meridian, Miss.; Memphis Hospital Medical College, 1909; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 47; died, June 16, at a local hospital, of heart disease.

Nelson Rinedollar, Mount Carroll, Ill.; Chicago Medical College, 1869; member of the Illinois State Medical Society; Civil War veteran; formerly health officer of Mount Carroll; aged 86; died, June 30, of heart disease.

Robert M. Murphy, Elkhart, Ind.; Ensworth Medical College, St. Joseph, Mo., 1889; Jefferson Medical College, Philadelphia, 1892; member of the Indiana State Medical Association; aged 65; died, May 16.

Jonathan Joseph Peters, Winnfield, La.; Memphis (Tenn.) Hospital Medical College, 1892; for twenty-five years coroner of Winn Parish; aged 72; died suddenly, June 29, of cerebral embolism.

David Q. Storie, Jr., Chariton, Iowa; Rush Medical College, Chicago, 1901; member of the Iowa State Medical Society; aged 50; was instantly killed, June 21, in an automobile accident.

Frank B. von Eisen Bockius, Berkeley, Calif.; Chicago Medical College, 1872; formerly a practitioner in Chicago; Civil War veteran; aged 78; died, June 23, of disseminated sclerosis.

Nicholas Robert Dann ⊕ New York; Medical Department of Columbia College, New York, 1894; on the staff of the New York Eye and Ear Infirmary; died, June 21, of heart disease.

Burt George Bissell, Chicago; University of Illinois College of Medicine, Chicago, 1907; formerly on the staff of the Cook County Hospital; aged 55; died, June 12, of pericarditis.

Percy W. Johns, Hot Springs National Park, Ark.; Medical Department University of Louisiana, New Orleans, 1878; aged 70; died, June 23, at the Trinity Hospital, Little Rock.

Charles Herbert Young, Reily, Ohio; Cleveland University of Medicine and Surgery, 1895; aged 53; died in April, at the Mercy Hospital, Hamilton, of cirrhosis of the liver.

Robert F. Tarr, Kittanning, Pa.; Maryland Medical College, Baltimore, 1900; member of the Medical Society of the State of Pennsylvania; aged 64; died, June 17, of uremia.

John S. Shirley, Clarion, Pa.; College of Physicians and Surgeons, Baltimore, 1883; also a lawyer; aged 68; died, June 15, at St. Francis Hospital, Pittsburgh, of nephritis.

Paul Gauthier, Montreal, Que., Canada; University of Montreal Medical Faculty, 1924; on the staff of St. Paul's Hospital, where he died recently, of diphtheria, aged 26.

James Reed Lytle, Tillamook, Ore.; Rush Medical College, Chicago, 1884; member of the Ohio State Medical Association; aged 74; died suddenly, June 15, of myocarditis.

Malcolm Graham Robinson, Wytheville, Va.; Medical College of Virginia, Richmond, 1897; member of the Medical Society of Virginia; aged 54; died, June 25.

Mark Zopfie, Stonington, Colo.; Cleveland University of Medicine and Surgery, 1897; aged 68; died recently, of injuries received in an automobile accident.

Edwin J. Gause, Unity, Ill.; Central College of Physicians and Surgeons, Indianapolis, 1882; aged 67; died, July 6, at Cairo, of a self-inflicted bullet wound.

Thomas Watts Byerly, Laurel, Md.; Hahnemann Medical College and Hospital of Philadelphia, 1893; formerly mayor of Laurel; aged 57; died, June 15.

William Knight, Clinton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1871; aged 78; died, June 12, of cerebral hemorrhage.

DeForest A. Bronson ⊕ North Fond Du Lac, Wis.; Chicago College of Medicine and Surgery, 1910; aged 47; died suddenly, June 15, of heart disease.

Walter B. Knight, Cincinnati; Pulte Medical College, Cincinnati, 1888; aged 57; died of skull fracture received when attacked by a robber, June 29.

McDonald Watkins ⊕ Natchez, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1900; aged 51; died, June 19.

Vernon Dayton Holbrook, Peoria, Ill.; Baltimore Medical College, 1902; aged 49; died, April 17, of streptococcus sore throat and bronchopneumonia.

Frank Kendall Perkins, Hempstead, N. Y.; Medical Department of the University of the City of New York, 1884; aged 67; died, June 23.

George Frederick Jones, Webbwood, Ont., Canada; University of Toronto Faculty of Medicine, 1888; died, March 23, of cerebral hemorrhage.

Joseph Riley Buffington, Nelson, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1875; Civil War veteran; aged 85; died, June 22.

William H. Rand, Washington, D. C.; Yale University School of Medicine, New Haven, 1877; Civil War veteran; aged 79; died, June 21.

William M. Bailey, Bowling Green, Ky.; Medical Department, University of Nashville, Tenn., 1871; aged 90; died, May 23, of senility.

Duncan Orestes Alguire, Cornwall, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1873; aged 71; died, May 4.

John Lee Elder, Dallas, Texas; University of Louisville (Ky.) School of Medicine, 1898; aged 58; died, June 22, at Oakland, Calif.

Osbourne Foster Chadbourne, Syracuse, N. Y.; University of Michigan Medical School, Ann Arbor, 1883; aged 70; died, June 26.

Finis Ewing Jeffery, Desha, Ark.; University of Louisville (Ky.) School of Medicine, 1879; aged 69; died, June 18, of heart disease.

Paul Leo Hefty ⊕ New Glarus, Wis.; Rush Medical College, Chicago, 1921; aged 33; died suddenly, June 15, of heart disease.

John Henderson Wright, Alexis Creek, B. C.; University of Edinburgh, Scotland, 1876; aged 73; died, June 1, at Vancouver.

Harry Young Messec, Narberth, Pa.; Ohio Medical University, Columbia, 1898; aged 52; died, June 23, of heart disease.

Ida M. Sanborn, Chicago; Bennett College of Eclectic Medicine and Surgery, 1898; aged 57; died, July 3, of heart disease.

Samuel O. Rawlings, New Harmony, Ind.; Cincinnati College of Medicine and Surgery, 1873; aged 79; died, June 14.

James Robert Batson, Cynthiana, Ky.; Medical College of Ohio, Cincinnati, 1879; aged 69; died, June 21, of neuritis.

Charles Augustine Covell ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1894; aged 58; died, May 21.

Charles H. Pulford, Seymour, Conn.; Hahnemann Medical College and Hospital, Chicago, 1888; aged 65; died, June 12.

George Granville Graessle ⊕ Seymour, Ind.; Vanderbilt University Medical Department, 1888; aged 59; died, June 13.

Douglas D. Weems, Greeneville, Tenn.; Louisville (Ky.) Medical College, 1891; aged 60; died, May 26, of anemia.

Jerome B. Lyon, Logan, Ohio; Medical College of Ohio, Cincinnati, 1880; aged 72; died, May 17, of pneumonia.

Moffitt Forster, Toronto, Ont., Canada; Victoria University Medical Department, 1865; aged 84; died, May 5.

Robert Lee Ford, Livermore, Ky.; Barnes Medical College, St. Louis, 1899; aged 62; died, June 16, of erysipelas.

James Edward Galvin, Ludlow, Vt.; Baltimore University School of Medicine, 1895; aged 54; died, June 9.

John F. O'Keefe, Mount Clemens, Mich.; Rush Medical College, Chicago, 1879; aged 67; died, June 26.

David Alexander Drennan, Springfield, Ill.; Rush Medical College, Chicago, 1875; aged 74; died, June 26.

Hamilton Williams, New York; Royal College of Physicians, Ireland, 1875; died, in June, aged 85.

August Muehlenpfordt, Ashkum, Ill. (licensed, Illinois, 1877); aged 86; died suddenly, June 12.

Heber Arden Ward, Denver; Maryland Medical College, Baltimore, 1899; aged 49; died, June 13.

Emil C. Becker ⊕ Deerfield, Ill.; Rush Medical College, Chicago, 1897; aged 63; died, July 6.

Oliver James, Cory, Ind.; Indiana Medical College, Indianapolis, 1877; aged 84; died, June 12.

David A. Dyer, St. Louis; Missouri Medical College, St. Louis, 1881; aged 68; died, June 13.

Melvin Preble, Portland, Me.; Medical School of Maine, Portland, 1866; died, June 19.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

MIZAR

Mr. Sorokowski's Red Pepper Cure for Rheumatism

J. Sorokowski, who used to do business from 2424 West Superior Street, Chicago, but is now, apparently, operating from a west side suburb, Oak Park, sells (especially to the foreign element) a product that he calls "Mizar" as "the most effective remedy for rheumatism." Mizar comes in the form of an ointment, scented with bergamot and lemon. The instructions are to rub it on the parts affected and then bandage and keep the parts warm. Sorokowski states that on the second or third day an eruption will appear with itching. "Such eruption," says Sorokowski, "proves that the cause of ailment moves to the surface of the body—you will experience some swelling and redness, but don't get alarmed for that's the way Mizar is doing his work."

Some months ago a physician who does work in the dermatologic department of one of the free dispensaries in Chicago wrote in part as follows:

> "About the middle of last winter a middle aged man came in with a severe dermatitis of one arm and leg. The patient had been using Mizar salve for rheumatism and wherever he had applied the salve, and only on these places, he had developed an acute severe dermatitis.
>
> "Last Wednesday another Polish patient, an adult man, came into the clinic with the following history: A friend recommended 10 days before that he try Mizar salve for his rheumatism which he did. The next day he stated that his legs became fiery red. He was obliged to go to the Cook County Hospital for a week. When seen in the clinic ten days after the one and only application of this salve he still had an acute dermatitis of both legs with some involvement of the scrotum and patchy areas on the hands and face.
>
> "Briefly, here are two cases of dermatitis venenata from a salve called Mizar. Enclosed is the literature that accompanies a jar of this salve. The picture, name and address all appear on the jar. The salve is put up in a jar with a metal top (similar to commercial cold cream jar). It holds about two ounces or perhaps a little more. The retail price is $4.25 a jar which is what each of the two patients paid."

More recently we received a letter from a physician in Detroit, accompanied by a jar of Mizar. This physician wrote in part as follows:

> "Mizar is being sold here in Detroit among foreigners, for rheumatism, gastric ulcer, hernia and everything. The price charged is $4.25. I had a patient under my treatment with a peculiar rash from this salve—this prompted me to write to you."

A jar of Mizar was obtained, and the A. M. A. Chemical Laboratory was asked to determine the irritating substance responsible for the cases reported. The laboratory report follows:

LABORATORY REPORT

> "One original package of Mizar (Joseph Sorokowski, Chicago) was submitted to the A. M. A. Chemical Laboratory for examination. The jar contained about 2 ounces (60 gm.), of a soft ointment having a pale, cream-yellow color and an odor suggestive of a mixture of bergamot and lemon oils. The taste was exceedingly pungent, thus suggesting the presence of capsicum extractives.
>
> "Qualitative tests indicated the absence of alkaloids, sodium borate (borax), and compounds of the heavy metals, such as lead, mercury, antimony, arsenic and bismuth; barium and calcium compounds were not found. Tests for volatile oil of mustard and for cantharides and ginger were negative. Soap, a saponifiable fat, petrolatum and considerable amounts of extractives from capsicum were present. Organoleptic tests indicated that the preparation contained capscium extractives equivalent to about 1 gm. of oleoresin of capsicum in 100 gm. of material. The amount of ash was 2.2 per cent. The total solids amounted to 77 per cent., about one half of which was petrolatum and the remainder consisted of soap and fat.
>
> "Mizar may be considered essentially an ointment, the chief active ingredient of which is an extract from capsicum. The ointment base is evidently a mixture of soap, petrolatum, a saponifiable fat and water."

Presumably a product of this sort appeals to those purchasers of "patent medicine" who feel that they are not getting their money's worth unless the preparation has an appalling smell or taste or will produce some physiologic reaction that will make them sit up and take notice.

Correspondence

ETHICS AND THE DENTAL PROFESSION

To the Editor:—As your circulation manager can tell you, I have been taking The Journal for several years. It is an important addition to my professional education, and I always read it through, which is more than I can say for some of the journals of my own profession that come to my table.

I want to express my appreciation of all that you publish, but in particular of the department of "Propaganda for Reform," and especially to mention the recent article on the "Whole Wheat" concern and the Defensive Diet League. Nothing could be truer, and more fair, in my opinion, than the way you handled the case of the Defensive Diet League. I happened to be one of those who were taken in for $10 when the league was being given birth. The purposes seemed plausible and meritorious, and were, apparently, sponsored by my state society. However, it did not take me long to discover the unreliability and preposterousness of much that it stood for.

At the annual meeting of the American Society of Orthodontists, held in Kansas City last year, the whole question of unrestricted advertising in dental journals and uncensored exhibits or clinics at our meetings was discussed, and a movement for reform was set on foot. Since then I have on several occasions brought these matters to the attention of dental societies and publications, but my efforts have met with little or no progress. I am still interested, however, and I wish to obtain reprints of the articles in The Journal to which I have referred for use in further efforts to effect improvement.

In the meantime I trust that you will remember that if the dental profession has not yet adopted your high ideals it is because we are not as old a profession as medicine, and therefore have not arrived at the same point.

L. H. Wirt, D.D.S., South Bend, Ind.

"YEAST IN THE TREATMENT OF PELLAGRA"

To the Editor:—In an abstract with this title (The Journal, June 20, p. 1947), you emphasize Goldberger's work. It is indeed difficult to understand why you should regard Goldberger's efforts to evade the vitamin theory as to the causation of pellagra advanced by Funk as worthy of comment, and ignore efforts to substantiate Funk's theories.

At first, Goldberger advanced the theory that the absence of amino-acids in diet was the causative factor. Since the publication of my article in the *Medical Record,* he has stated that the factor is one which he designates as P-P, which is derived from brewers' yeast and administered in tomato juice or milk. You are, of course, aware of the fact that brewers' yeast, milk and tomato juice furnish one of the greatest sources for vitamin B.

It is particularly significant that the protein diet heretofore recommended by Goldberger had to be abandoned subsequently or else augmented with a diet rich in vitamin B in order to effect a cure of pellagra. And now he is trying to claim that this high vitamin diet contains a hitherto unknown factor P-P.

I did not attempt to ignore or evade any one's hypotheses nor did I call another's theory by some other name and claim it as my own. It is my opinion that, according to the rules of fair play, my article deserves the same comment as does Goldberger's P-P. N. M. OWENSBY, M.D., Atlanta, Ga.

[COMMENT.—THE JOURNAL has no desire to fail to give credit where due in connection with the progress of medical investigation. Pellagra, like a number of other diseases, has been the subject of vigorous debates and frequent changes of opinion with respect to its etiology. The hypotheses have included theories incriminating some toxin in spoiled food, notably maize; some microbiotic agent as the noxious factor, and dietary deficiencies of one sort or another. From time to time some of the proposed explanations have been reviewed in THE JOURNAL (Pellagra, editorial, May 29, 1920, p. 1520; The Pellagra Problem, Aug. 13, 1921, p. 560; The Conquest of Pellagra, Jan. 26, 1924, p. 305), especial effort being made on more than one occasion to impress our readers with the warning that the subject of the precise etiology of pellagra remains an open one; though latterly the claims for pathogenesis due to some deficiency in the diet have unquestionably merited the strongest emphasis, if not final approval.

The view that pellagra may be due to a shortage of certain vitamins in the food intake has, indeed, been vigorously presented in the past. In the latest edition of his book on vitamins, Funk (The Vitamines, translated by H. E. Dubin, Baltimore, Williams & Wilkins Company, 1922), whose views our correspondent champions, dismisses the etiology of pellagra with these words:

> We are inclined to the view of Goldberger, who considered the following etiological factors as possible:
>
> 1. Partial lack of vitamins.
> 2. Lack of animal protein.
> 3. Lack of a still unknown vitamin.
> 4. The combined influence of all these factors.
>
> We believe that the dilution of protein with carbohydrates increases the vitamin requirements, so that although the vitamins are present, they do not suffice. We have mentioned the possible significance of the important substance, associated with proteins, and it is not impossible that this factor is lost during the milling of corn. It would be rather premature to consider the chapter of pellagra as closed.

Our correspondent, writing two years later (Owensby, N. M.: Pellagra, *M. J. & Rec.* **120**:377 [Oct. 15] 1924), reported observations in twenty-eight cases of pellagra for which he states that "the only treatment consisted of the addition of tomato juice, raw cabbage, lettuce, and the water in which vegetables had been cooked (colloquially known as 'pot liquor'), to their daily diet and a recovery was recorded in each case. The time required for a complete abatement of all symptoms varied from three to sixteen weeks, depending on the advance of the disease. The slowest to recover presented a rather well marked psychomotor retardation, slight amnesia, and complained of intense headaches in addition to the more familiar symptoms of the disease. It was noted that each patient had previously subsisted on a vitamin free diet and had a marked aversion to the foods prescribed." This is without question an interesting statement; but in the absence of more detailed information it can scarcely be classed as a scientific report that could be subjected to adequate critical analysis, particularly with respect to details of the diet. The author concludes, however, that:

> It would appear that Funk was correct in his theory that pellagra is due to a deficiency of vitamins in the foods of those so affected. And since there is a complete subsidence of all symptoms of the disease when the patient is placed on a diet rich in water soluble vitamins, it would seem that the particular dietary factors constituting the specific pellagra producing fault is an inadequate supply of the antineuritic vitamin B, with the lack of the antiscorbutic vitamin C playing a contributory rôle.

With respect to the findings and claims of Goldberger and his associates of the U. S. Public Health Service, there appears to be a sequence of somewhat changing official statements. This, of itself, is no disparagement of research; for knowledge grows with experience, and our views often deserve to be recast in accord therewith. On the other hand, shifting views should serve to make us critical of any momentary pronouncement and keep us open minded toward the unstable decisions. In 1923 (Goldberger, Joseph; Waring, C. H., and Tanner, W. F.: Pellagra Prevention by Diet Among Institutional Inmates, *Pub. Health Rep.* **38**:2361 [Oct. 12] 1923) it was announced that "the idea that pellagra is a communicable disease receives no support from this study. Pellagra may be completely prevented by diet." In 1924, later conclusions read: "Fresh meat and milk contain the essential pellagra-preventive factor or factors. It is estimated that about 4 to 4½ ounces (125 gm.) of fresh beef (lean round steak) and not over about 40 fluidounces (1,200 gm.) of buttermilk will suffice to prevent pellagra in all but very exceptional instances. Fresh butter (from cows largely pasture fed) ingested daily in quantities averaging approximately 125 to 135 gm. (butter fat, 100 to 110 gm.) failed to prevent pellagra in several instances in which it was tried. Cod liver oil ingested daily in quantities averaging upward of 2 gm. per kilogram of body weight failed to prevent pellagra in several instances in which it was tried. The primary etiological dietary factor in pellagra is a faulty protein (amino-acid) mixture, a deficiency in some as yet unrecognized dietary complex (possibly a vitamin), or some combination of these" (Goldberger, Joseph; and Tanner, W. F.: A Study of the Treatment and Prevention of Pellagra, *Pub. Health Rep.* **39**:87 [Jan. 18] 1924). Thus the possible significance of fat-soluble vitamins seems to have been excluded.

Subsequently (Wheeler, G. A.: Pellagra in Relation to Milk Supply in the Household, *Pub. Health Rep.* **39**:2197 [Aug. 29] 1924) the importance of fresh meats and milk in the dietary was stressed. In 1925 a revised series of conclusions seemed to be warranted, as follows:

> A liberal supply of protein presumably of good biological quality does not completely prevent, though it may modify, the clinical picture of pellagra by notably delaying or preventing the development of the distinctive dermatitis. This modifying action may be of an indirect, sparing nature. In the prevention (and presumably causation) of pellagra there is concerned a heretofore unrecognized or unappreciated dietary factor which we designate as factor P-P. This may be effective with but little, possibly without any, cooperation from the protein factor. Factor P-P may possibly play the sole essential rôle in the prevention (and causation) of pellagra. Factor P-P is present in brewers' yeast, in milk and (on the basis of our experience with fresh meat) in lean beef; it is very low or lacking in dry soy beans, dry cow peas, butter, cod liver oil, and canned tomatoes (Goldberger, Joseph; and Tanner, W. F.: A Study of the Pellagra-Preventive Action of Dried Beans, Casein, Dried Milk and Brewers' Yeast, with a Consideration of the Essential Preventive Factors Involved, *Pub. Health Rep.* **40**: 54 [Jan. 9] 1925).

It is this statement that seems to have aroused some skepticism as to the possible rôle of a lack of the familiar vitamin B. A few months later, however, the beneficial effects of yeast or yeast concentrates was more specifically urged, with the reminder that "in all but the severe cases of pellagra careful feeding is all that is needed. In our judgment, it is only in cases of more than average severity, or where such foods as fresh milk and fresh meat cannot be procured, that yeast may serve a valuable purpose and may help to save life" (Goldberger, Joseph; Wheeler, G. A., and Tanner, W. F.: Yeast in the Treatment of Pellagra and Black Tongue, *Pub. Health Rep.* **40**:927 [May 8] 1925).

Goldberger and his associates state that they were led to test the action of yeast in pellagra by reason of some very favorable indications afforded by tests of this preparation in experimental black tongue in dogs. This is a disease showing, according to the government investigators (Wheeler, G. A.; Goldberger, Joseph; and Blackstock, M. R.: On the Probable Identity of the Chittenden-Underhill Pellagra-Like Syndrome in Dogs and "Black-Tongue," *Pub. Health Rep.* **37**:1063 [May 5] 1922) a striking similarity and probable identity with a pellagra-like syndrome experimentally produced in dogs by Chittenden and Underhill (Chittenden and Underhill: The Production in Dogs of a Pathological Condition Which

Closely Resembles Human Pellagra, *Am. J. Physiol.* **44**:13 [Aug. 1] 1917) and described by them in 1917. The investigation to this experimentally produced disease has been continued at Yale University by Underhill and Mendel (Underhill, F. P., and Mendel, L. B.: The Effective Agent in the Prevention or Alleviation of the Chittenden-Underhill Pellagra-Like Syndrome in Dogs, *Pub. Health Rep.* **40**:1087 [May 29] 1925), with the endeavor to discover a remedial agent. In their own words:

> Having established by actual trial a dietary adequate to mantain dogs, a single known deficiency has been created in an endeavor to determine the character of the protective substance. It may be stated at once that the syndrome is associated with a lack of some unknown constituent of butter fat. This substance will prevent the incidence of the disease in dogs, or, if the disease is once established, will either alleviate or cure it. The unknown substance present in butter is not identical with fat soluble A, since active cod liver oil fails to protect against the disease or to modify appreciably the syndrome once established. It is also quite clear that if this effective agent partakes of the nature of a vitamin, its function is quite different from functions of vitamins hitherto recognized. . . . Carrots, which may probably be considered as the best source of carotin, are particularly effective in alleviating the Chittenden and Underhill syndrome when it is once initiated. We have been so impressed with the efficacy of carrots as a curative agent that, particularly in view of the remedial potency of the yellow colored egg yolk and butter, we have adopted as a working hypothesis the possibility that the effective agent is either a natural pigmentary substance or some unidentified compound associated therewith.

Evidently the last word on this much debated subject has not yet been spoken.—Ed.]

MEASLES AND DIPHTHERIA OCCURRING CONCURRENTLY

To the Editor:—Recently, attention has been called to carelessness on the part of some physicians in not examining patients thoroughly. The following two cases well illustrate need of a thorough examination even though the diagnosis seems absolutely certain from a casual inspection:

A boy, aged 9 years, was taken sick with sneezing, fever, watering of the eyes and a slight sore throat, January 21. The following day an eruption had appeared. A physician was called and diagnosed the case as measles. However, as the physician is a competent pediatrician, he examined farther and found an inflamed throat with a small patch on one tonsil. He diagnosed it as diphtheria and gave antitoxin. Cultures proved the correctness of his diagnosis. With the prompt administration of antitoxin the child made a nice recovery, even if two serious diseases were present at the same time.

A boy, aged 5 years, had an onset of sneezing, inflamed eyes and fever, June 20. A physician was called, June 22. The eruption was beginning but was indefinite. The physician made a thorough examination of the throat. Although no definite patch was present, he made a culture which proved positive for diphtheria bacilli. By the time the culture could be reported (the following day after it was taken) the clinical diagnosis of diphtheria was possible, and by that time the eruption of measles was definite. If the physician had not made a thorough examination and taken a culture, but had been satisfied with a diagnosis of measles *only*, an unnecessary death may have occurred. As it is, the boy is making a satisfactory recovery.

In communicable diseases it occasionally happens that two occur concurrently, and it is only by a careful examination that both can be recognized. Failure to recognize both may lead to the spread of one of them to other persons and also result in deaths due to failure to employ proper therapeutic measures. So we plead for thorough examinations in all cases. It is by careful attention we can continue to keep our standards above that of irregular practitioners.

J. L. Pomeroy, M.D.,
J. W. Robinson, M.D., Los Angeles.
Health Officer and Deputy Health Officer,
Respectively, Los Angeles County.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COLLOIDAL BENZOIN TEST

To the Editor:—In a recent copy of the *Archives of Neurology and Psychiatry* reference was made to the colloidal benzoin test, and I would appreciate it very much if you would kindly furnish me with the technic.

R. H. Foster, M.D., Pineville, Pa.

Answer.—The technic of the colloidal benzoin action in the cerebrospinal fluid is given by Hicks and Pearce (*Brit. M. J.*, Feb. 16, 1924):

1. The gum benzoin must be the Sumatra gum, obtained as the natural product in brown masses containing white or yellowish white lumps. One gram of the freshly powdered Sumatra resin is dissolved in 10 c.c. of absolute alcohol. This is well shaken and let stand for forty-eight hours. It is then decanted, and 0.3 c.c. of the clear fluid is slowly added to 20 c.c. of twice distilled water at 35 C. A homogeneous suspension is thus obtained. This suspension must always be freshly prepared for each batch of tests.

2. A 0.01 per cent. solution of chemically pure sodium chlorid is made in water twice distilled through a glass condenser.

3. For each fluid to be examined, a series of six or twelve test tubes is put up. Into the first tube, 0.25 c.c. of the saline solution (0.01 per cent.) is placed; into the remaining tubes, 1 c.c. Then 0.75 c.c. of the cerebrospinal fluid under examination is measured into the first tube, and 1 c.c. of the cerebrospinal fluid into the second tube; 1 c.c. from the second tube is put into the third tube and mixed thoroughly; 1 c.c. from Tube 3 is put into Tube 4, and so on till the penultimate tube is reached, when, after mixing, 1 c.c. is discarded. Thus the last tube contains only saline solution, which acts as the control tube. To each tube, including the control, 1 c.c. of gum benzoin suspension is added and mixed thoroughly. The mixture is allowed to stand on the laboratory bench about twelve hours before reading.

The reading of the tubes is simple, three degrees of precipitation being recognized, and these can be graphically represented by the numerals 0, 1 and 2. In the first of these (0) no change occurs, the fluid remaining as in the control tube without any precipitate. The next degree shows some precipitation, but the fluid still remains opaque; this is designated 1. In the third there is complete precipitation, the supernatant fluid being quite clear: this is called 2.

There are two types of readings which may be regarded as "negative" or "normal." One type shows no change whatever, reading as 0 in all five or eleven tubes; the other types give a precipitate in Tubes 7 to 9 inclusive. In these tubes the reading may be either 1 or 2.

ADMINISTRATION OF HEXAMETHYLENAMIN

To the Editor:—We have encountered some difference of opinion as to the method of administering hexamethylenamin. My practice has been to acidify the urine, when necessary, by administering acid sodium phosphate some hours before. A physician trained in England maintains that there is no reason why the two drugs should not be given together, and advances the following quotations to sustain his view:

Squire's Companion to the British pharmacopeia says: "The use of urotropin (together with acid sodium phosphate, which should always be given with it) as a prophylaxis . . ." And then in the pharmacopeias of the London hospitals, under the heading Mistura Hexamine, appear: "Hexamine 10 gr.; acid sodium phosphate, 30 gr.; chloroform water to 1 oz. University Hosp." The same prescription is listed by St. Thomas's and, with water to 1 oz., by the Royal Free Hospital. Charing Cross Hospital uses hexamine, 5 gr.; acid sodium phosphate, 10 gr.; tincture hyoscyamus, 10 min.; chloroform water to 1 ounce. Lock and Saint Mary's hospitals are also quoted as using mixtures containing hexamine and acid sodium phosphate.

In Frank Kidd's Common Infections of the Kidneys, I find, p. 67: ". . . and order a mixture containing acid sodium phosphate to be taken four times a day. Dissolve in each dose one or two 5 grain tabloids of hexamine. Hexamine supplied in a mixture does not keep, as it is decomposed by the acid." This view seems about middle ground between the hospital mixtures and what I believed to be the common American practice, as expressed in Bastedo's Materia Medica, etc., as follows: "If the urine is alkaline, it may be acidified by acid sodium phosphate, but this must not be given at the same time as the drug, as they are chemically incompatible."

The frequent use of this drug, and apparently its frequent misuse, leads me to ask for a statement as to the how and why of administration.

E. Dargan Smith, M.D., Wuchow, China.

Answer.—As is usually the case, under circumstances when reliable authorities seem to disagree, both are partly right and partly wrong. Bastedo's standpoint is theoretically correct. Acids do decompose hexamethylenamin; but the decomposition is not sufficiently extensive and rapid in extemporaneous mixtures as those employed by the British as to constitute a serious incompatibility. In a solution containing hexamethylenamin, 3 gm., acid sodium phosphate, 9 gm., in distilled water, 120 c.c., a faint reaction for free formaldehyd is obtainable immediately after mixing, though the reaction is much less intense than that obtained in a solution of the same amount of hexamethylenamin in 0.2 per cent. hydrochloric acid. This can be readily understood when we compare the hydrogen ion concentration of the two solutions, which with the acid sodium phosphate mixture, is p_H 5.6, while the hydrochloric acid mixture is more acid than p_H 3. In the course of days, when kept at ordinary room temperature and in diffused light, the formaldehyd reaction in the solutions increases, and the odor and the acrid taste of formaldehyd become perceptible, so that, in course of time, the solution would become unfit for use. When recently prepared, the acid sodium phosphate-hexamethylenamin mixture is not objectionable, as it contains considerably less free acid and therefore free formaldehyd than would be liberated in the stomach with its higher p_H content. In view of the comparative instability of the mixture, it would seem advisable either, as Useful Drugs recommends, to administer acid sodium phosphate midway between doses of hexamethylenamin, or, as elsewhere suggested to add the hemamethylenamin to a solution of acid sodium phosphate just before administration. In any instance it must be borne in mind that the urine must not be just acid, but markedly acid in order to permit sufficient liberation of formaldehyd by hydrolysis.

ANTIVENOM OUTFIT

To the Editor:—I am enclosing an advertisement of the Monarch Drug Company of San Diego, Calif., describing their antivenom outfit for the treatment of snake bite. I wish to secure your opinion as to its effectiveness, before placing dependence on it in such a *grave emergency as that* for which it is used.

G. R. Stevenson, Indianapolis.

Answer.—The Monarch Drug Company's antivenom outfit is said to consist of potassium permanganate tablets, sterile water for making a solution, a hypodermic syringe and needle for injecting, caffein tablets to be used as a heart stimulant, and a tourniquet with directions for using.

Sollmann and Cushny, in their textbooks on pharmacology, state that potassium permanganate is used in snake-bite both for washing the wound and for injection. They warn, however, that it is effective against the poison only if used a few minutes after the bite. The use, therefore, of potassium permanganate appears to be rational if it can be applied promptly.

The treatment of snake-bite was discussed in The Journal, July 4, 1925, page 57.

BORAGE TEA

To the Editor:—Have you ever heard of such a thing as "borage tea"? My brother-in-law, who is out in Albuquerque taking a "cure," asked me about it. Some friend wrote and told him it would cure his throat, and I should like to tell him just what it is. Please let me have any information you can about it.

B. C. W., Chicago.

Answer.—Borage tea is a decoction prepared from *Borago.* The following description of *Borago* is taken from the Dispensatory:

> Borago. *Borago officinalis,* L. *Borago.* *Bourracke,* Fr. *Borasch, Boretsch,* G. (Fam. *Boraginaceae.*)—This European annual abounds in mucilage, and the stems and leaves contain potassium nitrate with other salts. To these constituents the plant owes its feeble medicinal properties. An infusion of the leaves and flowers is employed as a demulcent, refrigerant, and gently diaphoretic drink. The expressed juice of the stems and leaves is also given in the *dose* of from two to four fluidounces (60-120 mils).

The substance acts as an emulsion just as many other such mucilaginous substances do. It is not official in the U. S. Pharmacopeia or the National Formulary; it has no standing as a medicine.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, Sept. 1. Sec., Dr. Harry C. De Vighne, Juneau.
Philippine Islands: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.
Porto Rico: San Juan, Sept. 1. Sec., Dr. Diego A. Biascoschea, 3 Allen St., San Juan.
South Dakota: Deadwood, July 21. Dir., Dr. H. R. Kenaston, Bonested.

Delaware June Examination

Dr. H. W. Briggs, secretary, Medical Council of Delaware, reports the written and practical examination held at Wilmington, June 16-18, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 4 passed and 2, including 1 osteopath, failed. Four candidates were licensed by reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Washington University	(1923)	85.7
Jefferson Medical College of Philadelphia	(1924)	82.2, 87.1
University of Berlin, Germany	(1910)	83.2

FAILED

College	Year Grad.	Per Cent.
Temple University	(1920)	74.8
Osteopath		69.3

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Boston University School of Medicine	(1924)	Maine
University of Vermont	(1922)	W. Virginia
Medical College of Virginia	(1915) West Virginia, (1924)	Virginia

Massachusetts May Examination

Dr. Charles E. Prior, secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, May 12-14, 1925. The examination covered 17 subjects and included 170 questions. An average of 75 per cent. was required to pass. Of the 33 candidates who took the physicians' and surgeons' examination, 12, including 1 osteopath, passed and 21, including 2 osteopaths, failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Stanford University School of Medicine	(1922)	82.4
Johns Hopkins University	(1921)	87.1
Harvard University	(1921)	85.3
Middlesex Coll. of Medicine and Surgery	(1921) 79.5, (1923)	77.2
Tufts College Medical School	(1922) 80.8, (1924)	82.0
University of Michigan Medical School	(1916)	75.0
St. Louis College of Physicians and Surgeons	(1924)	76.2
University of Vermont	(1924)	82.6
University of Toronto	(1921)	76.5
Osteopath		75.0

FAILED

College	Year Grad.	Per Cent.
Maryland Medical College	(1913)	60.7
Middlesex College of Medicine and Surgery	(1923, 3)	57.9, 59.3, 70.4, (1924) 69.7, (1925) 59.5
Kansas City College of Medicine and Surgery	(1922)	28.2
St. Louis College of Physicians and Surgeons	(1921)	70.5, (1922, 3) 55.9, 60.3, 71.2, (1923, 3) 63.1, 70.0, 72.8, (1924, 2) 73.1, 73.4
National University, Athens, Greece	(1923)*	41.0
University of Catania, Italy	(1917)*	51.3
University of Naples, Italy	(1914)*	69.7
Osteopaths		64.8, 67.0

* Graduation not verified by the American Medical Association.

Minnesota April Examination

Dr. Thomas S. McDavitt, secretary, Minneosta Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, April 7-9, 1925. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Eleven candidates were examined, all of whom passed. Sixteen candidates were licensed by reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern University	(1924)*	87.1
Rush Medical College	(1924)*	87.6
Johns Hopkins University	(1923)	85.9

University of Minnesota Medical School	(1924, 2)† (1925, 4)†	87.7, 89.7, 81.8, 86.7, 88.6, 90.0
St. Louis University	(1924)	81.8
University of Buffalo	(1923)	88.8

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of California	(1916)	California
Rush Medical College	(1922), (1924, 2)	Illinois
College of Physicians and Surgeons, Chicago	(1906)	S. Dakota
State University of Iowa	(1898), (1910), (1923)	Iowa
Johns Hopkins University	(1920) North Carolina, (1923)	Maryland
Harvard University	(1922)	Illinois
University of Michigan Medical School	(1920), (1923)	Michigan
St. Louis University	(1920)	Illinois
Woman's Medical College of Pennsylvania	(1921)	Virginia
Milwaukee Medical College	(1910)	Wisconsin

* This candidate has completed his medical course and will receive his M.D. degree on completion of a year's internship in a hospital.

† This candidate has completed his medical course and received an I.B. degree, and will receive his M.D. degree on completion of a year's nternship in a hospital.

Book Notices

Practical Surgery Illustrated. By Victor Pauchet. Translated by F. R. B. Atkinson, M.D., C.M. With an Introduction by Sir Charles Gordon-Watson, C.M.G., F.R.C.S., Surgeon and Joint Lecturer in Surgery, St. Bartholomew's Hospital. In six volumes. Boards. Price, 18 shillings 6 pence net, per volume. Pp. Vol. I, 293, with 217 illustrations; Vol. II, 252, with 199 illustrations; Vol. III, 248, with 308 illustrations; Vol. IV, 255, with 307 illustrations. London: Ernest Benn, Ltd., 1925.

Victor Pauchet's reputation as a brilliant surgeon has led to this translation. The work is not offered as a textbook of operative surgery, but is a presentation of operations as practiced by the author. The work is essentially an atlas of illustrations, drawn from life, depiciting the various operations step by step. A certain amount of text accompanies the presentation of each operation. While this is essentially secondary to the illustrations and deals chiefly with operative technic, other considerations, such as anatomy, pathology, diagnosis, therapeutic indications, postoperative care and prognosis, are included in some of the chapters. Each operative procedure is clearly presented, and the illustrations are excellent and show vividly each step as performed by the author. In the four volumes that have appeared are included five operative procedures dealing with surgery of the head and neck; two on tumors of the breast; one chapter on surgery of the biliary passages; nine on gastric surgery; two on the appendix; sixteen on surgery of the large intestine, including the rectum; eleven on gynecologic operations; five on genito-urinary surgery; two on hernia; one on hydrocele; one on open operations on recent fractures, and one on recurring dislocation of the shoulder. This material appears throughout the four volumes in utter confusion. Although each volume begins with a list of contents it lacks an orderly index, and nowhere is any reference made to a complete index for the entire work. Furthermore, is it conceivable why any surgeon would desire one volume alone, since the material covering any one subject is not collected in any one volume?

The author presents many original ideas and clever details of technic. Some of his ideas would not meet the approval of American surgeons; for, example the great faith he places in multiple drainage in cases of gangrenous appendicitis. Also he is an ardent disciple of Lane with all that this means and presents the subject under the title of "Lane's disease." Also his views on the pathology and operative treatment of goiter differ from those generally held, but demand consideration in view of the fact that he has performed 300 operations on the thyroid with only one death, and states that Berard of Lyons has operated on a thousand goiters without a death. The chapter on the operative treatment of fractures, which is contributed by Dujarier, advocates operation for practically all fractures of the long bones with displacement, including the clavicle. Steel bands and plates are advocated. In America the tendency is to limit open operations and particularly the introduction of nonabsorbable fixation apparatus as far as possible. Similarly, American surgeons would not follow his practice of regarding a gastro-enterostomy of Roux as the most rational operation for duodenal ulcer, nor would they recommend complete colectomy for congenital megacolon, and consider it an easier and milder operation than partial colectomy. In the treatment of carcinoma of the breast, Pauchet performs a radical operation of the usual type, but divides the clavicular portion of the pectoralis major and clears the axilla before dividing the sternal portion. He uses deep radiotherapy eight days before the operation and three weeks after. He is an advocate of gastrectomy for gastric and juxtapyloric ulcers. When he performs gastrojejunostomy, he does not close the pylorus. He advocates partial gastrectomy for postoperative jejunal ulcer. Total gastrectomy is described for carcinoma of the stomach. The end of the esophagus is united to the side of the jejunum, and a jejunojejunostomy is added to prevent regurgitation of bile into the esophagus. In the radical cure of inguinal hernia, the author describes his "endoperitoneal" method; the peritoneum is opened above the sac without disturbing the cord, a finger is inserted into the sac from within, and then with gauze the cord is peeled off from the sac which covers the finger. A portion of the rectus sheath is used to cover the cord. In nephrectomy for carcinoma of the kidney, he uses a transverse incision and a combination of the intraperitoneal and extraperitoneal route. For adenoma of the prostate he prefers the open operation under guidance of the eye to the blind method of Freyer. He believes that the operation should be performed in two stages in about 25 per cent. of the cases. He prefers the perineal route in fat persons or in those suffering from cardiac or renal disease. He makes use of preliminary vasectomy. He is an advocate of the transverse suprapubic incision in pelvic operations. For cicatricial stricture of the rectum, he performs perineal extirpation unless inflammatory complications are present. Under such circumstances a temporary colostomy is established, and the extirpation is delayed until after some months have elapsed.

In general, the work is distinctly interesting and contains much of value.

A Systematic Handbook of Volumetric Analysis or the Quantitative Determination of Chemical Substances by Measure, Applied to Liquids, Solids and Gases. *Adapted to the Requirements of Pure Chemical Research, Pathological Chemistry, Pharmacy, Metallurgy, Manufacturing Chemistry, Photography, etc., and for the Valuation of Substances Used in Commerce, Agriculture, and the Arts.* By Francis Sutton, F.I.C., F.C.S. Eleventh edition. Revised throughout, with numerous additions, by W. Lincolne Sutton, F.I.C., Public Analyst for the Counties of Norfolk and Suffolk, Norwich, Ipswich, etc., England, and Alfred E. Johnson, B.Sc., F.I.C., A.R.C.Sc.I., Additional Public Analyst for the County of Stafford and the Borough of Wolverhampton, etc., England. Cloth. Price, $9. Pp. 629, with 120 illustrations. Philadelphia: P. Blakiston's Son & Co., 1924.

To have served analytic chemistry for sixty-one years, and have reached eleven editions besides a French translation, is presumptive evidence of the usefulness of Sutton's Volumetric Analysis. It is not often that an author of a scientific book lives to see his publication pass its fiftieth year and still be in extended use. Such was the good fortune of Mr. Sutton, although he did not live to see the sixtieth aniversary of his work. When the first edition of the book appeared, volumetric analysis had scarcely more than begun to be an exact science. This work, therefore, has seen the subject expand from a relatively few methods for the analysis of a few substances to a large number of methods applicable in one form or another to the examination of a great number of materials. The volume covers such a wide range of topics that it will be found useful to analysts in almost every field. It concerns itself primarily with the general principles of analysis, alkalimetry and acidimetry, analysis by oxidation or reduction, and analysis by precipitation. Applied methods are given for inorganic substances, organic substances, urine, gas, water and sewage. The pitfalls in manipulation, sources of error and limits of accuracy in most analytic methods are discussed. The chapters on antimony, arsenic, iron, organic nitrogen, phenol (carbolic acid) and the salicylates will be helpful to analysts in medicine. From the American point of view the book is faulty in that it has not been revised to include some methods in much favor with American chemists. For example, the Hanus method for the determination of the iodin absorption number of fats and oils is not described, although it is official in the U. S. Pharmacopeia and is the official method of the Association of Official Agricultural

Chemists. Further, volumetric determination of alkaloids, an important feature in the analysis of medicines, is not described. No mention is made of the newer indicators, such as bromcresol green, bromthymol blue and bromcresol purple. The tables on the analyses of British public water supplies will not, of course, be of much value to American chemists and sanitary engineers. While the book will be useful as a work of reference to chemists in general, American analysts of medicines will probably continue to depend principally on the methods given in the U. S. Pharmacoepia, in the Official and Tentative Methods of Analysis of the Official Association of Agricultural Chemists, and in the more highly specialized works on the subject.

An Investigation of the Salmonella Group, with Special Reference to Food Poisoning. By William G. Savage, M.D., and P. Bruce White, B.Sc. Medical Research Council. Special Report Series, No. 91. Paper. Price, 3 shillings 6 pence net. Pp. 159. London: His Majesty's Stationery Office, 1925.

This technical report deals with the identification and classification of the salmonella group, its distribution in nature, and the effects produced in animals by salmonella infections. The authors state that the groups as described by them are distinctly distinguishable. Perhaps one of the most interesting experiments that they conducted was with the so-called heat-stable strains. The conclusion is apparently drawn that certain canned foods involved in outbreaks of food poisoning are sterile, but, with heat-stable toxic products of the bacteria present, the consumption of such bacterially sterile food would cause symptoms. Furthermore, it is stated that repeated injections of animals with saline extracts of such suspected canned foods will in certain instances stimulate the appearance of low titer agglutination for salmonella bacilli. This is interesting, but the available evidence of food poisoning outbreaks in America does not confirm this contention. In addition, specific low titer agglutination in the blood serums of animals that have been injected with sterile food would appear to be of rather doubtful significance. The classification of types of strains used by these authors is apparently as follows: 1, *B. enteritidis;* 2, Derby; 3, *B. paratyphosus* B; 4, Stanley; 5, *B. aertrycke;* 6, Newport; 7, Reading; 8, *B. suipestifer;* 9, *B. abortus-equi.* Of these the authors declare that Nos. 1, 2, 4, 5, 6 and 7 can cause food poisoning in human beings. Moreover, they state that the common cause of food poisoning outbreaks are *B. aertrycke* and *B. enteritidis. B. suipestifer* is included, but not especially as a cause of food poisoning in man. *B. paratyphosus* B and *B. abortus-equi* are stated to have nothing to do with food poisoning. The last statement as to *B. paratyphosus* B is not confirmed by available data in America. *B. aertrycke,* regarded by the authors as the commonest cause of food poisoning, appears to be distributed in many animal hosts, among which are mice, rats and pigs. The authors state that *B. aertrycke* and *B. enteritidis* show marked irritant action on the stomach and duodenum of rabbits when these animals are fed with virulent strains. This phenomenon was demonstrated with living organisms, with bacterial emulsions killed at 60 C., and with boiled emulsions. They state, however, that "boiled bacilli" cause a more marked irritant action, and this appears to be local in character.

Atmungsapparat. Die Untersuchungsmethoden der Nase, der Nebenhölen, des Rachens, des Kehlkopfes, der Luftröhre und der Bronchen, von Walter Albrecht. Die Untersuchung des Auswurfes, von Heinrich von Hoesslin. Die Technik der Perkussion: Die Technik der Auscultation: Röntgenologische Technik der röntgenologischen Untersuchung des Thoraxmittelschattens, insbesondere des Herzens und der grossen gefässe, von Heinrich Gerhartz. Funktionsuntersuchungen an den Lungen des Menschen mittels gasanalytischer Methoden, von Joh. Lindhard. Die Messung des intrapleuralen Druckes, von Paul Hoffmann. Methodik der Untersuchungen der Atemnerven, von Heinrich Boruttau. Handbuch der biologischen Arbeitsmethoden. Herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden. Abt. V, Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 4, Heft 6. Lieferung 151. Paper. Price, 13,80 marks. Pp. 1328-1662, with illustrations. Berlin: Urban & Schwarzenberg, 1924.

This volume is part of a series edited by Prof. Emil Abderhalden, the different sections of which are covered by different authors. The subject is considered in such detail that no attempt can be made to review the book critically. The first section describes the examination of the upper respiratory passages, directly, and of the trachea and bronchi by electroscopic methods. The roentgenologic examination of each portion is considered separately, and enough detail to give the reader a general idea of the methods and findings. The succeeding section considers the gross, microscopic and chemical examination of the secretions of the respiratory passages, normal and pathologic, including the more simple qualitative methods for the detection of the drugs more commonly excreted. To the technic of percussion and of auscultation separate sections are devoted. Each includes a comprehensive discussion of the different methods of examination, with details of the technic and findings. The technic and results of roengenologic examination of the chest are gone into with equal thoroughness in the next chapter, and here, as in the preceding chapters on auscultation and percussion, the heart and great vessels are included. A chapter is devoted to the investigation of lung function by methods of gas analysis, with methods for the determination of lung volume, the minute volume of the blood stream, and the oxygen and carbon dioxid content of the venous blood entering the lungs. Then follow chapters on the measurement of intrapleural pressure by different methods, and a final chapter on methods of physiologic investigation of the respiratory nervous mechanism. The earlier chapters are of direct interest to every physician, and especially to those teaching physical diagnosis. The chapter on the roentgenologic examination also contains much that is of value to every clinician, but is of especial interest to the roentgenologist. The later chapters for the most part concern those interested in special investigation. The thoroughness with which each section is considered, and the abundant references to the literature, give the volume great value as a book of reference.

The Blood: A Guide to Its Examination and to the Diagnosis and Treatment of Its Diseases. By G. Lovell Gulland, C.M.G., M.D., B.Sc., Professor of Medicine and Clinical Medicine in the University of Edinburgh, and Alexander Goodall, M.D., F.R.C.P.E., Assistant Physician to the Royal Infirmary. Third edition. Cloth. Price, 25 shillings net. Pp. 424, with 45 illustrations. Edinburgh: W. Green & Son Limited, 1925.

Much recent material has been incorporated in this edition. The aim of the book has been "to put in the hands of the student and practitioner a volume giving a concise and clear account of the diseases and diseased conditions of the blood and blood-forming organs, based on a large experience of them in clinical work and in the laboratory." The main interest in the book lies, therefore, in the histologic, pathologic and clinical aspects of the subject, the technical details of the chemical examination of the blood having been reduced to a minimum. The book is divided into five parts: methods of examination of the blood; the formed elements of the blood; diseases of the blood, bone-marrow and lymphoid tissues; the blood in special diseases, and diseases due to animal parasites. The subject matter is presented in a clear and concise manner. Of especial value is the rather full discussion of the various morphologic changes found in the blood cells in the diseases discussed, much of this material being based on the researches of the authors. The relationship of the pathologic changes in the blood to the clinical symptoms is brought out in an instructive manner, while the sections devoted to treatment are full and should prove of value to the clinician. The illustrations are adequate and the colored plates well done. This work should prove valuable in the daily routine of the student and the practitioner.

Proteins and the Theory of Colloidal Behavior. By Jacques Loeb, Member of the Rockefeller Institute for Medical Research. Second edition. Cloth. Price, $3.50. Pp. 380, with illustrations. New York: McGraw-Hill Book Company, 1924.

This is a rather thorough revision and enlargement of the first edition. The late Professor Loeb, whose career and achievements are so much admired, has personally added new experimental work. He has thereby strengthened the arguments he advanced in his first edition. If his theory is correct, much has been accomplished in simplifying our vague ideas of certain colloidal phenomena; if not, that fact will be discovered in due time. Just now, however, there is need for this book.

Miscellany

TYPHOID FEVER OUTBREAK FROM OYSTERS IN NEW YORK

Interesting features of the epidemic of typhoid fever that affected New York and other cities during the past winter have been reported by Dr. Louis I. Harris, director of the Bureau of Preventable Diseases, Department of Health, New York City (*Monthly Bulletin*, City of New York, Department of Health, **15**:18 [April], 34 [May], 50 [June] 1925). Dr. Harris relates the steps by which various avenues of infection were investigated and freed from responsiblity for this outbreak. A group of seven cases was traced to ice cream, and this false clue confused the search. The evidence incriminating shellfish included the unusually high incidence among the well-to-do, and among women; the low incidence among children; the use, by those affected, of various milk and water supplies; the safeguards constantly maintained as regards milk and water; the low incidence among nationalities that serve uncooked vegetables (notably Italians), and the large number of patients giving the history of eating oysters and other shellfish. Out of 914 cases recorded in the outbreak, oysters are known to have been eaten in 506. During the period of the epidemic, a number of sailors with typhoid were taken from ships to New York hospitals. Deducting these cases, secondary cases and the "normal" number of typhoid cases from the total of 914 leaves 650 as the estimated number of primary cases due to an unusual etiologic factor. Since 506 (78 per cent. of 650) gave a history of eating oysters, shellfish can be blamed with a considerable degree of certainty. Further evidence was gained by the questioning of 3,320 families by public health nurses as to the history of eating oysters. The well-to-do notably were unwilling to cooperate in this investigation, and, in many cases, resented inquiries and refused information. However, the inquiry disclosed that the well-to-do used shellfish four times as frequently as the poor. The fifty-two cases of typhoid among Italians were chiefly among the well-to-do. Of the 506 patients who were known to have eaten shellfish, 402 had eaten them at hotels and restaurants. Dr. Harris is not satisfied with the report of the United States Public Health Service, implicating the West Sayville oyster beds. The New York studies include the largest number of oyster-borne typhoid cases of any city, and these studies place a number of oyster beds under suspicion. The shellfish used by 341 persons were traced to nine different states. Since the largest part of New York's oyster supply always comes from Great South Bay, it is to be expected that the largest number of cases of typhoid fever could be traced to that source. That the danger of another typhoid epidemic is still present is indicated by a survey of sources of contamination of oyster beds, by the use of oysters from casual sources, and by the exposure to infection of those who bathe in polluted waters. Dr. Harris sugests a means of preventing typhoid from these causes. Shellfish must be produced, distributed and marketed under as careful regulations and supervision as are now applied to milk and water supplies. It is to the interest of the oyster industry to promote needed sanitary measures. Pleasure boats should not be allowed on or near oyster beds, and oyster-dredging vessels should be equipped for the storage and disinfection of excrement, which should never be emptied near oyster beds. The floating of oysters should be prohibited. Only in emergencies, and under certain restrictions, should the transplantation of oysters from polluted waters be permitted. It is recommended that shellfish should be chlorinated as a precaution additional to the observance of all other sanitary measures. Clean ice for refrigeration and clean water for washing oysters are requisite. The cleanliness and sealing of containers should be prescribed and inspected. Shuckers and other laborers who handle oysters should be given medical examinations. With these precautions, Dr. Harris believes that the number of cases occurring each year from unknown causes would be considerably decreased, and that the present danger of another acute outbreak of typhoid would be greatly reduced. Finally, Dr. Harris points out that the observance of these precautions is to the interest of the oyster industry.

FATALITIES IN COAL MINES

Accidents at coal mines in the United States in May resulted in the loss of 181 lives, according to the Bureau of Mines. The death rate was 4.15 per million tons of coal produced, as compared with 3.33 for May, 1924. The increase was due mainly to an explosion at Sanford, N. C., May 27, in which fifty-three lives were lost, and to another at Piper, Ala., May 31, which killed six men. Without these disasters the death rate for the month would have been 2.80 per million tons of coal mined. Records compiled by the Bureau of Mines for the first five months of 1925 show that 930 men lost their lives in the mines. The production of coal during the period was 234,978,000 tons, making the fatality rate 3.96 per million tons; for the corresponding months last year, the rate was 4.82. Six major disasters, with a total loss of 154 lives, occurred during the first five months of this year, as compared with five disasters and a loss of 384 lives for the corresponding months of last year. An examination of the causes of accidents that have occurred thus far in 1925 shows a substantial reduction in the death rate per million tons caused by explosions of gas or coal dust, a slight increase in haulage accidents, and no material change for accidents due to explosives, electricity and falls of roof and coal.

REPORT OF JOINT COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

A committee representing the National Education Association and the American Medical Association, with the cooperation of the National Committee for the Prevention of Blindness, conducted a study for more than a year of the conservation of sight of school children. Dr. Thomas D. Wood, Columbia University, was chairman of the committee. The study extended into 375 cities and rural districts in every state and was assisted by about 100 ophthalmologists and by school and health authorities. In its report before the National Education Association, Indianapolis, July 1, the committee shows that about 5,000,000 school children in the United States received eye examinations during the period of this study, and that about 12 per cent. of them had defective vision. This figure suggests that considerable progress in eyesight conservation has been made in the schools since previous studies. Generally, the rural districts report a larger percentage of defective vision than city districts. Rural districts in Pennsylvania, for example, showed 16.8 per cent. of defective vision among 500,000 pupils examined, while in the cities only 8.5 per cent. showed defective vision among 370,000 pupils examined. Rural districts in Iowa report 14.4 per cent. defective vision, and city districts in Iowa 6.3 per cent. defective vision. The problem facing school administrators, the report says, is to find the means of removing the handicap of defective vision of one eighth of the 24,000,000 school children; even when the most effective service is rendered for conserving the sight of school children, there will still be about 48,000 in the United States with such seriously defective vision that they cannot be educated in the regular classes. These children are not blind and cannot be profitably educated in schools for the blind where educational methods are adapted to finger reading. In only seventeen states is the examination of the eyes of school children compulsory and, of these, few specify the portion of the school population to be examined or the frequency of the examinations. Among the recommendations of the committee are (1) a uniform model law for the examination of the eyes of school children in all states and cities; (2) greater emphasis on the matter of conserving children's vision, especially the finding and correction of the faulty conditions of vision, providing properly lighted classrooms and making special provision for conservation of vision classes for those having seriously defective vision, and (3) examination of the eyes of all pupils yearly under the best possible conditions and by the most skilled persons available.

Medicolegal

What Are External and Visible Marks of Injury

(Feis v. United States Ins. Co. (Neb.) 201 N. W. R. 558)

The Supreme Court of Nebraska, in affirming a judgment in favor of the beneficiary of an accident insurance policy, says that one of the provisions of the policy was that the company should be liable only where there were some external and visible marks of an injury. The evidence showed that the insured received a violent blow on the stomach sufficient to knock him down, to affect his breathing, and to cause a slight pallor in his face at the time of the accident. There was also medical testimony that such a blow would probably cause a reddening of the skin which would soon disappear. Were there any "external and visible marks"? The words must not be strictly, but liberally, construed as regards the insured. It is not required that such marks shall be either immediately visible or enduring in their nature. What is essential is that there is some manifestation abnormal in its nature and affecting the physical man, the existence of which may be ascertained by observation or examination. In this case the insured did not think that he was much hurt, and for several days worked as usual. Apparently he was not examined by any one until after he had, on the sixth evening after the accident, vomited blood. There was no proof that there was then any visible mark of the blow on his body. Much medical testimony was adduced on the question of whether, if a mark had been made on the body at the time of such a blow, it would have disappeared before the time the examination was made, and on the question as to the probable existence of gastric ulcer. The court holds that the requirements as to external and visible marks were sufficiently met.

Injunction Against Chiropractor Practicing Medicine

(Louisiana State Board of Medical Examiners v. Cronk (La.), 102 So. R. 415)

The Supreme Court of Louisiana says that the defendant as a chiropractor, and appealed from a judgment of a dis-ict court sustaining an injunction sued out against him by e state board of medical examiners, restraining him from urther practice, and awarding the plaintiff board attorney's ees in the sum of $50. The basis of the injunction proceeding as that the defendant was practicing medicine in the state f Louisiana without having obtained a certificate from the oard as required by Section 15 of Act 56 of 1914. The lefendant did not pretend to have complied with the law of he state requiring examination before, and certificate from, he board, but set up in his answer the defense that he was ot practicing medicine within the definition of the medical ct, and held license from both the state of Louisiana and the ity of Alexandria as authorization for the pursuit of his alling. He testified that he used no drugs in his practice, which consisted solely in adjusting the subluxated vertebrae of the spine with both hands, and that the application of the hands was not in the nature of either rubbing or pressing, but was a thrusting movement. He admitted that the purpose of making these adjustments was to bring about a correction of the subluxation of the vertebrae, and thereby produce a normal functioning of the organs of the body, or a betterment in the condition of the health of his patients. He also admitted that he had a card in the newspapers as a chiropractor, so that people desiring adjustments would know where to find his office. He admitted, too, that he treated a good many persons suffering with liver, kidney and stomach complaints, and with other bodily ailments.

As, under Section 13 of the medical act, the mere direction or application of physical force for the treating, curing or relieving of any disease or ailment is made an offense, it was clear from the testimony in this case that the defendant had violated that section, as he was practicing medicine within the intent and meaning of the act, and without having obtained a certificate from the state board of medical examiners, as required by Section 15 of the act. Under such circumstances the injunction was properly and rightfully sustained, with attorney's fees in the sum of $50 in favor of the plaintiff board; and the judgment appealed from is affirmed, at the cost of the appellant.

It is well settled that neither a state nor a municipal license entitles a licensee to pursue his business in violation of the criminal laws of the state, or in violation of the ordinances of a city. The possession of such license by the defendant was therefore unavailing as a defense. It is also equally well settled that the state, in the legitimate exertion of its police power for the protection of the public health, is fully authorized to make provisions deemed necessary for that purpose, and to determine what is, or shall constitute, the practice of medicine. Such provisions, being enacted for the public good and the general welfare, cannot be construed as an illegal interference with the constitutional right of every citizen to earn a living.

Roentgen-Ray Examination of Eye Required—Damages

(Kosak v. Boyce (Wis.), 201 N. W. R. 757)

The Supreme Court of Wisconsin says that on November 23 the plaintiff was struck across one eye by part of a spring. That afternoon he called on the defendant, who specialized in diseases of the eye, ear, nose and throat, and told him that he thought there was a piece of steel in the eye. The defendant examined the eye, found a scratch across the center of the cornea, but concluded that the cornea was not perforated, that there was nothing of a foreign nature in the eye, and that the eye had suffered no internal injury. Other visits were made to the defendant on the 24th and 26th, on each of which occasions he examined the eye, as he had done on the 23d, by the use of the ophthalmoscope, direct illumination and oblique focal rays, but discovered nothing in the eye. He did not again examine the eye to discover whether the cornea had been perforated. He concluded that the scratch on the cornea accounted for the pain, and for the sensation which caused the plaintiff to believe that there was something in the eye; and he treated the eye merely with the view of healing the scratch. December 27 and 29 and February 9 were the dates of further visits, on the last of which the defendant discovered an opacity in the lens. From the 11th to the 26th of February the plaintiff made frequent calls at the office of an eye surgeon, who on each occasion made a careful examination with the ophthalmoscope, practically as the defendant had done. During the course of these examinations the surgeon discovered two opacities in the lens of the eye, but did not discover anything in the nature of a foreign substance in the eye until the 26th, after which he caused two or three roentgenograms to be taken, which revealed the presence of a foreign object in the eye. April 8, a small piece of steel was removed by the use of a magnet. May 10, a needle operation was performed on the eye, and on June 27 the lens of the eye was removed.

The mere fact, standing alone, that the defendant failed to locate the foreign substance in the plaintiff's eye by the use of the ophthalmoscope did not necessarily indicate that he was negligent in its use, especially in view of the difficulty experienced by the surgeon in locating the foreign substance by the same means. But the court thinks that the evidence justified the finding that the defendant was negligent in failing to use the roentgen ray for the purpose of ascertaining whether a foreign substance was present in the eye, although, according to the testimony, the roentgen ray is employed as a sort of last resort, and its use is rather infrequent; it is used in only from 2 to 4 per cent. of the cases of eye injuries, the frequency of its use varying somewhat among practitioners, and the necessity for its use depending no little on the judgment of the practitioner and on the satisfaction which the ophthalmoscopic examinations give him; and, besides, the use of the roentgen ray is somewhat expensive, and the expense must be justified.

The jury awarded the plaintiff $2,000 damages, but the affirmation of a judgment in his favor is conditioned on his accepting one for $500 only, because he was entitled to damages for only the pain and suffering sustained as the proximate result of the defendant's negligence, there being no basis in the record for the assessment of any damages for the impairment of the eyesight, the testimony of the experts being to the effect that the damage to the eye occurred when the foreign substance entered the eye, and not when it was removed; that whenever such a substance is removed by a magnet operation, whether early or late, a cataract will follow which will necessitate the removal of the lens. But as such pain and suffering was an element of damages not compensable under the workmen's compensation act, no deductions from the $500 should be made under the provisions of Section 2394—25 (3) of the Wisconsin Statutes of 1921 for any amount paid to the plaintiff by his employer under the provisions of the workmen's compensation act.

Case in Which Femur of Child Was Broken in Delivery

(Kos v. Brault (Mass.), 146 N. E. R. 16)

The Supreme Judicial Court of Massachusetts says that the defendant physician was called to attend the plaintiff's wife in childbirth. In the delivery, which occurred at about 3 a. m., December 19, the femur in the left leg of the child was broken. Contradicted by the defendant, the plaintiff introduced evidence which warranted a finding that the defendant did nothing for the broken bone at that time; that he went away and returned at about 6 p. m., and then set the leg in splints in a manner that was improper and did not serve the purpose for which the splints were intended; that at about 6 p. m. the next day the defendant returned to see the child, and did not thereafter call to see or attend it. There was further evidence for the plaintiff that the splints became loose on the 23d and the defendant was notified thereof; that on the 24th a message was sent to him that the splints had fallen down, with a request that he should come to the house; that on the 25th the plaintiff called at the defendant's home and asked that he be sent to see the child, as the bandages were down and it was constantly crying. The evidence was undisputed that on the morning of the 26th the plaintiff, in the exercise of reasonable care, engaged another physician to attend the child, and later in the day the plaintiff notified the defendant, on his arrival at the house, that his services were no longer required. The second physician found that the hematoma over the part of the bone that was broken was in a septic condition. It further appeared that, following an operation and treatment by that physician, blood poisoning set in and the child died, January 19, as a direct result of such poisoning.

For the defendant, there was medical testimony that in a delivery under conditions such as existed in this case it was not uncommon for a leg to be broken. There was also testimony that after the birth the defendant tied the broken leg to the child's body in such a way that no further injury could develop; that he set the leg on the evening of the same day; that he called to see the child every day from December 19 to 26 (except on the 24th, when he was out of town), until he was discharged by the plaintiff; and that he kept the splints in place around the leg by reenforcing the bandages.

At the request of the plaintiff, who brought this action as administrator of the estate of the child to recover for the death and conscious suffering of the child, the presiding judge instructed the jury that if it found that proper treatment of the child required that the leg be mobilized, and that the defendant in attempting to accomplish mobilization placed on the leg improper splints, or carelessly permitted the splints to become loose, and if the result of that was that the fractured ends of the bone injured the tissues, which caused the septic condition, then the jury might find that the defendant was liable for the septic condition and its consequences. The jury, however, found for the defendant, and thereby necessarily found that no original negligent act, and no want of that reasonable degree of learning, skill and experience which the defendant in law was required to possess and exercise, caused the bone in the leg to be broken during the delivery, or at the birth of the child; or caused, through inattention, neglect and lack of professional skill, a septic condition in the leg over part of the bone that was broken. With the finding of the jury, there was no issue of damages to which was applicable a requested ruling that the defendant was responsible for the result, even though the treatment of the second physician was improper and negligent.

There was no reversible error in the negative answer to the question to the physician and defendant: "Was there anything in your treatment of the case, as you saw it, that was different from the treatment of such a case by the ordinary practitioner under similar circumstances?"

Exceptions to verdict for the defendant overruled.

Validity of Will Made After Paralytic Stroke

(Payne v. Payne et al. (W. Va.), 125 S. E. R. 818)

The Supreme Court of Appeals of West Virginia, in reversing a decree that was rendered for the plaintiff in a suit to impeach a will, says that the testator, aged 74, suffered a stroke of paralysis, April 17, which affected his entire left side. While very ill, April 26, he executed his will. He died, June 21. For a week or two at least he was unable, because of the impediment in his speech and his weakened condition, to express his thoughts as readily and clearly as before. But while it was undoubtedly true that he was physically enfeebled, and it might be true that his mind had lost much of its former vigor, neither from the proof of his condition nor from the circumstances of the will itself could the court say that he was incapable of recollecting his properties and of determining the manner of their disposition. In a suit to annul a will on the ground of mental incapacity of the testator, mere infirmity of mind and body, due to a paralytic stroke, is not sufficient to overcome the legal presumption of capacity in the testator. The true test of his mentality is to be determined as of the time the will was made and executed. It must affirmatively appear that he did not then have mind sufficient to understand the nature and consequences of his act, the property to be disposed of, and the objects of his bounty. If undue influence is charged, the testator's weakened physical and mental condition is to be considered, but the undue influence must be shown to be such as wholly to destroy the free agency of the testator, and substitute the will of another for his.

Information Gained by Participant in Examination

(Leonczak v. Minneapolis, St. P. & S. S. M. Ry. Co. (Minn.), 201 N. W. R. 551)

The Supreme Court of Minnesota says that the plaintiff in this action to recover damages for injuries went to the office of a physician for medical advice and treatment. Another physician was there. The defendant offered to prove by the latter physician the condition found on the examination made by the plaintiff's physician. The evidence was rejected on the objection of the plaintiff. The physician by whom the defendant wanted to make such proof testified that the plaintiff's physician asked him to look at the plaintiff; that he asked him because he was a physician and surgeon; that he wanted his professional opinion; that the plaintiff did not object; that he participated in the physical examination with his consent; that the examination was in a professional capacity as a physician and surgeon; that the plaintiff's physician asked him in such capacity; that what he learned from the examination was learned in order to enable him to act in that capacity; and that after the examination he gave his professional opinion to the plaintiff's physician. The court holds that the information acquired by the participating physician was privileged within the Minnesota statute under which a physician or surgeon cannot, without the consent of his patient, disclose any information which he acquired "in attending the patient in a professional capacity, and which was necessary to enable him to act in that capacity."

Society Proceedings

COMING MEETINGS

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Oregon State Medical Society, Medford, Sept. 2-4. Dr. C. L. Booth, 1021 Selling Bldg., Portland, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

29: 729-870 (June) 1925

Development and Diet of Chinese Children. J. Hammond and H. Sheng, Peking, China.—p. 729.
*Duodenal Contents of Infants in Health, and During and Following Diarrhea. W. C. Davison, Baltimore.—p. 743.
*Acid Effect of Hydrochloric Acid and Lactic Acid Milk. R. G. Flood, San Francisco.—p. 757.
*Anhydremic Acidosis Due to Lactic Acid. S. W. Clausen, St. Louis.—p. 761.
*Auricular Fibrillation. R. T. Ogden, Hartford, Conn.—p. 767.
*Basal Metabolism of Children with Ichthyosis. F. B. Talbot and M. Hendry, Boston.—p. 770.
*Lipolytic Activity of Blood Serum in Tuberculosis. E. T. Wilkes, New York.—p. 773.
Goiter Incidence in School Girls of New York City. I. H. Goldberger and A. K. Aldinger, New York.—p. 780.
Congenital Webbing. J. M. Frawley, Rochester, Minn.—p. 799.
Recent Work in Anatomy, Physiology and Pathology of Infancy and Childhood. J. B. Holmes, Baltimore.—p. 806.

Duodenal Contents of Infants with Intestinal Disturbances.—The data presented by Davison suggests that in digestive disturbances in infants, especially in diarrhea and, to a lesser extent, in bacillary dysentery, the activity of the duodenal amylase and trypsin is decreased, and the hydrogen ion concentration of the duodenal contents and the numbers of colon bacilli in the duodenum are increased.

Acid Effect of Hydrochloric and Lactic Acid Milk.—Flood asserts that hydrochloric acid milk exerts a marked diuretic action not shared by lactic acid formulas. The total acidity of the urine, which is the measure of the acid effect produced by any ingested acid, is markedly increased by hydrochloric acid, but is little changed by lactic acid milk. The reason that lactic acid has little effect on the total acidity of the urine is probably because it is completely oxidized in the blood stream, and, therefore has little effect on the acid base balance of the blood plasma.

Lactic Acid Acidosis.—Evidence is presented by Clausen for the existence of a type of acidosis due to lactic acid. This type of acidosis occurs clinically in cases of circulatory failure, especially in cardiac decompensation and anhydremia. Anhydremic acidosis is not caused by lactic acid in all cases. Ketosis is not marked in lactic acid acidosis. Lactic acid acidosis is adequately relieved by the treatment of the underlying circulatory condition. Administration of alkali in lactic acid acidosis is liable to cause alkalosis.

Auricular Fibrillation in Child.—Ogden reports a case of auricular fibrillation in a child, aged 10 years. Only three cases of patients, 10 years of age or less, have been reported in the literature; two were rheumatic in origin and one followed diphtheria. Ogden's patient had had diphtheria, chickenpox and influenza.

Basal Metabolism in Ichthyosis.—Basal metabolism studies made by Talbot and Hendry lead to the conclusion that ichthyosis in the majority of cases is not due or related to hypothyroidism. Whatever seeming temporary improvement may result from the administration of thyroid extract must be explained by some other means than the direct action of thyroxin on the metabolism.

Lipolytic Activity of Blood Serum in Tuberculosis.—Wilkes states that in the majority of cases of active tuberculosis in children and in adults, there is a lowered activity of the serum. No absolute rule can be made for determining the prognosis of a given case of tuberculosis from the value of the serum lipolytic activity, but in general the greater the severity of the tuberculosis the lower is the lipolytic activity of the serum.

American Journal of Hygiene, Baltimore

5: 245-370 (May) 1925

Production of Anti-Agglutinins. R. R. Hyde and E. I. Parsons, Baltimore.—p. 245.
Excystation in Giardia Lamblia from Man. R. W. Hegner, Baltimore.—p. 250.
Giardia Felis N. Sp., from Domestic Cat and Giardias from Birds. R. W. Hegner, Baltimore.—p. 258.
Culicoides of North and Central America and West Indies. W. A. Hoffman, Baltimore.—p. 274.
Trichomonas Vaginalis Donne. R. W. Hegner, Baltimore.—p. 302.
*Survey of Turpentine Industry for Possible Larvicidal Substances. M. E. Barnes.—p. 309.
*Toxic Action of Oil Films on Mosquito Larvae with Reference to Pine Oil Films. M. E. Barnes.—p. 315.
Life Table Nomogram. R. Pearl and L. J. Reed, Baltimore.—p. 330.
Experimental Methods for Study of Epidemics. L. T. Webster, New York.—p. 335.
*Irritating Properties of Larva of Parasa Hilarata Staudinger. R. G. Mills, Peking, China.—p. 342.

Larvicidal Properties of Turpentine.—Among the raw materials, products and by-products of the turpentine industry, which were studied by Barnes, larvicidal properties in sufficient strength to merit further investigation were found only in turpentine and in pine oil. Turpentine, after standing for some time, was found to be effective against both anopheles and culicine larvae. It is too expensive, however, to be employed in antimosquito work. Pine oil was found to be effective against both anopheles and culicine larvae.

Effect of Pine Oil on Mosquitoes.—Pursuing his studies of pine oil, Barnes found that it has a powerful soporific or paralyzing effect on mosquito larvae and pupae, and in effective doses results in their death either directly or, apparently, by drowning while under the effects of the drug. Anophelene and culicine larvae are able to withstand prolonged submersion in water. Anophelene and culicine larvae, in many cases, may be resuscitated after prolonged submersion, even after being in contact with oil films. Crude oil is an efficient and economical vehicle for carrying pine oil to larvae by means of film dosage. A mixture of crude oil and pine oil in the proportions of nine parts of the former to one of the latter produces a better film than either ingredient, and one which is highly effective in destroying all stages of anophelene and culicine larvae and pupae. The ova of *Anopheles quadrimaculatus* Say are partially resistant to pine oil acting through films.

Irritating Properties of Larva of Parasa.—*Pasasa hilarata*, Staudinger, has been found in North China (Peking and its environs) and has been shown to possess intense irritating properties. Mills says that injury is due to the mechanical introduction of a toxic substance by contact with any of the sharp pointed spines widely distributed over its body. It is apparently not necessary for a portion of the spine to remain in the skin. The so-called "Nettling hairs" are of very little importance. The toxic substance, which is contained within the spines, has not been separated therefrom. It was destroyed or inactivated by almost every procedure employed by Mills, the chief exceptions being water, liquor formaldehydi 5 per cent. and sodium hydrate 1 per cent. Living larvae are more irritating than dead ones, regardless of the manner in which they are killed. Rigidity of the body is not a necessary factor in the production of lesions with killed larvae. Spines, just severed from the body, retain their irritating properties, but preparations and extracts from various portions and produced in many ways failed to induce more than a slight mechanical injury in a few instances. The hypothetic toxic principle has not been definitely isolated and very little is known as to its nature. Observations bearing on the habits and life history of the species are described by Mills.

American Journal of Pathology, Boston

1: 247-340 (May) 1925

*Experimental Glomerulonephritis. E. T. Bell, B. J. Clawson and T. B. Hartzell, Minneapolis.—p. 247.
*Fibroma of Acoustic Nerve. V. C. Jacobson, Albany, N. Y.—p. 259.
*Pathology of Hypophysis. II. Lymphocytic Infiltration. J. P. Simonds and W. W. Brandes, Chicago.—p. 273.
Adenocarcinoma Resembling Thyroid. W. H. Feldman, Colorado.—p. 281.
Tissue Changes After Experimental Deep Roentgen-Ray Irradiation. A. Kolodny, Iowa City.—p. 285.

Mitochondria. I. Changes Occurring During Experimental Thyroid Hyperplasia and Its Involution with Iodin. D. P. Seecof, New York. —p. 295.
Origin of Mononuclear Phagocytes of Peritoneal Exudates. F. A. McJunkin, St. Louis.—p. 305.
*Filtrable Viruses. I. *Cultivation of Herpes Virus.* F. Parker, Jr., and R. N. Nye, Boston.—p. 325.
Filtrable Viruses. II. Cultivation of Herpes Virus. F. Parker, Jr., and R. N. Nye, Boston.—p. 337.

Experimental Glomerulonephritis.—The results obtained by Bell et al. were: intravenous injections in rabbits of several strains of streptococci from human sources produced in several instances nephritis of the spontaneous type (lymphocytic interstitial nephritis) but did not result in glomerulonephritis. Similar injections in monkeys resulted in two cases of severe nephrosis, one of acute interstitial nephritis, one of glomerulonephritis, and one of a type not yet determined. The case of glomerulonephritis was characterized by epithelial crescents, fusion of glomerular lobules to the capsule of Bowman, swelling of the endothelium with occlusion of the capillaries, and atrophy of tubules associated with occluded glomeruli. Glomerulonephritis has been produced in one monkey by intravenous injections of streptococci.

Fibroma of Acoustic Nerve.—Three cases of verified tumors of the cerebellopontile angle are reported by Jacobson. In one instance the tumors were bilateral and of practically the same size. The four tumors in the three cases reported were of almost identical histology and agreed essentially with the descriptions of the tumors of the nervus acusticus as described by Cushing, Mallory, Councilman and Goodpasture.

Lymphocytic Infiltration of Hypophysis.—Twenty-one cases of lymphocytic infiltration of the hypophysis, a lesion that does not appear to have been previously described in detail, are reported by Simonds and Brandes. The data available are insufficient to justify an opinion as to the effect of this change on the function of the hypophysis.

Cultivation of Vaccine Virus.—Vaccine virus was successfully cultivated by Parker and Nye in an artificial medium for 132 days. After 198 days, the virus was not demonstrable by the usual methods, but apparently gave rise to a certain degree of skin immunity as tested by revaccination. A method has been devised by means of which the virus content of any culture can be determined with a fair degree of accuracy. Using this method, the eleventh generation of one culture was shown to contain 51,000 times as much virus as the material from which it was started. These results suggest that the virus grows only in close proximity to the cells. Whether this growth takes place intracellularly or extracellulary cannot be stated at this time. Various other methods for the cultivation of vaccine virus were tried without success.

Annals of Clinical Medicine, Baltimore

3: 667-729 (May) 1925

*Glycolysis. H. J. John, Cleveland.—p. 667.
*Cutaneous Actinomycosis Recurring After Pregnancy. A. H. Waterman and G. F. Patrick, Chicago.—p. 697.
Interrenal Rhabdomyoma. W. H. Gordon and M. S. Feldman, Detroit. —p. 706.
Relief of Asthma in Presence of Chronic Bronchitis with Emphysema Through Nasal (Sphenopalatine) Ganglion. G. Sluder, St. Louis. —p. 718.

Glycolysis.—John's work has shown that a definite and uniformly progressive glycolysis takes place in blood in vitro. The cause of glycolysis is still undetermined. The degree of glycolysis is less in diabetic blood than in blood from normal subjects. The degree of glycolysis in both nondiabetic and diabetic blood is less when the specimen is kept at icebox temperature than when kept at room temperature. For comparative blood sugar studies to be of final value a uniform technic is required in order to avoid the intervention of the glycolysis factor.

Recurrent Cutaneous Actinomycosis After Pregnancy.—The points of particular interest in the case cited by Waterman and Patrick were: (1) Absence of any etiologic factors that might account for actinomycotic infection. The only thing that might be incriminating was the fact that the patient chewed grass in childhood. (2) Each time the patient became pregnant, actinomycotic symptoms appeared or were intensified. (3) Recurrence after apparent cure lasting sixteen months. (4) Roentgen-ray treatments continued over a long period of time controlled the condition, but were not successful in eradicating it, relapses occurring when the treatments were stopped. (5) Intravenous massive injections of sodium iodid were efficacious in controlling the symptoms of the disease and were well tolerated while slight doses were not. (6) There was no idiosyncrasy toward iodism when the sodium iodid was injected into the blood stream in large doses, although the small amount caused severe reaction.

Archives of Dermatology and Syphilology, Chicago

2: 721-880 (June) 1925

Skin Diseases and Syphilis in English Colonies of North America. J. E. Lane, New Haven, Conn.—p. 721.
*Wassermann Test. XIV. Effect of Sulpharsphenamin. D. L. Belding, Boston.—p. 736.
*Protein Sensitization in Pruritus with Lichenification. F. Wise and M. A. Ramirez, New York.—p. 751.
*Monilia as Possible Etiologic Factor in Psoriasis. M. S. Fleischer and M. Wachowiak, St. Louis.—p. 756.
*Clinical Significance of Some Common Dermatoses. F. J. Eichenlaub, Washington, D. C.—p. 759.
*Value of Flumerin in Treatment of Syphilis. J. C. Fox, Jr., G. H. Gildersleeve and J. F. Preston, New Haven, Conn.—p. 768.
*Pemphigus; Davis Treatment. G. W. Wende, Buffalo.—p. 782.
Experimental Studies on Immunity in Herpes Simplex. S. S. Greenbaum and M. J. Harkins, Philadelphia.—p. 789.
Hair; Hypertrichosis. C. H. Danforth, Stanford University, Calif. —p. 804.

Effect of Sulpharsphenamin on Wassermann Test.—The effect of sulpharsphenamin on the Wassermann reaction in a series of sixty-nine patients with acquired and congenital syphilis has been studied by Belding by periodic measurements of the Wassermann antibody. The results in these particular cases are reported and observations are made on some of the variable factors influencing the serologic effect of treatment.

Protein Sensitization in Pruritus.—Wise and Ramierez have obtained reactions in cases of neurodermatitis not only to the foods but also to pollens and animal emanations. It may be possible to divide the cases of neurodermatitis in a similar way to the present classification of bronchial asthma, namely, into the allergic and nonallergic types.

Monilia in Psoriasis.—In a series of thirty cases of psoriasis, Fleisher and Wachowiak found monilia or monilia-like organisms in the feces in 82 per cent., in the blood in 21 per cent., in the skin scrapings in 46 per cent. In normal subjects, monilia was found in only 6 per cent. of about 100 stools; on the skin of unexposed portions of the body (twenty-seven cases) and in blood cultures in no cases. It appears that the use of a vaccine prepared with these organisms is of some value in the treatment of psoriasis. These findings suggest strongly that the monilia and similar organisms bear some causal relation to psoriasis.

Dermatoses.—Twelve cases of common dermatoses falling in three general groups of constitutional disturbances are cited by Eichenlaub. Most of these patients have been benefited both in their general health and with respect to their dermatosis by the discovery of constitutional defects.

Flumerin in Syphilis.—Twenty-four patients were given a total of 185 injections of a 2 per cent. solution of flumerin over a period of eighteen months. The general plan was to give two doses of 3 mg. per kilogram of body weight twice a week, then a second two doses of 4 mg. per kilogram, and the remaining six of 5 mg. per kilogram, provided no toxic symptoms ensued. In that case, either a smaller dosage was resorted to or flumerin treatment was abandoned, depending on the severity of the toxic effects. Flumerin caused rapid regression and healing of all types of secondary lesions and somewhat slower but steady resolution and healing of tertiary lesions. A fairly active spirocheticidal value was established for the drug. No uniformly striking effect on the Wassermann reaction was obtained either when flumerin was used as the first method of treatment or in conjunction with the arsphenamins. One clinical relapse occurred under treatment. Five patients developed toxic symptoms severe enough to contraindicate further administration of the drug.

Davis' Treatment of Pemphigus.—Wende reports nine cases of pemphigus in which the Davis treatment gave good results. The treatment consisted of the injection of 0.065 gm. iron cacodylate, intravenously, and 1.5 c.c. of a 3 per cent. solution of coagulen, subcutaneously.

Arkansas Medical Society Journal, Little Rock

22: 1-17 (June) 1925

Vomiting in Infancy. D. Smith, Hope.—p. 1.
Case of Postoperative Fecal Fistula Slow to Heal. H. A. Stroud, Jonesboro.—p. 4.
Unusual Result of Gunshot Injury. A. E. Chace, Texarkana.—p. 5.
Cancer of Uterus. W. R. Brooksher, Fort Smith.—p. 6.
Simple Method of Removing Foreign Bodies from Nose. R. C. Dorr, Batesville.—p. 9.

Atlantic Medical Journal, Harrisburg, Pa.

28: 485-552 (May) 1925

Equipment and Technic for Use of Local Anesthesia. R. E. Farr, Minneapolis.—p. 485.
Local Anesthesia in Surgery of Neck. H. L. Foss, Danville.—p. 488.
Local Anesthesia in Surgery of Abdominal Wall and Cavity. C. F. Nassau, Philadelphia.—p. 492.
Local Anesthesia in Surgery of Extremities R. J. Behan, Pittsburgh.—p. 495.
Enlarged Thymus; Diagnosis and Radium Treatment. G. W. Grier, Pittsburgh.—p. 502.
Arachidic and Other Forms of Vegetal Bronchitis. C. Jackson, G. Tucker and L. H. Clerf, Philadelphia.—p. 506.
Influence of Focal Infections on Acoustic Nerve and Its End Organ. G. F. Gracey, Harrisburg.—p. 508.
Fractures of Nose. B. C. Gile, Philadelphia.—p. 512.
Fractures of Mandible. R. M. Entwisle and J. A. Gardner, Pittsburgh.—p. 515.

Boston Medical and Surgical Journal

192: 1085-1142 (June 4) 1925

*Clinical Significance of Recent Studies of Capillaries. E. P. Boas, New York City.—p. 1085.
Factors Important in Stimulating and Promoting Hospital Interdepartmental Cooperation. B. H. Mason, Boston.—p. 1091.
Hospital Library Service in New England. E. K. Jones, Boston.—p. 1093.
Opportunities for Postgraduate Study in Vienna. A. Thorndike, Jr., Boston.—p. 1094.
Rural Medical Service in Massachusetts. G. H. Bigelow and F. D. Adams, Boston.—p. 1097.
Surgical Indications Arising During Medical Management of Gastric Ulcer. S. M. Jordan.—p. 1106.
Fractured Neck of Femur. Transplantation of Femoral Head to Trochanter. E. G. Brackett, Boston.—p. 1118.
Hollow Dilator for Use in Cases of Chronic Tracheal Stenosis. F. E. Cruff.—p. 1120.
Legal Decision Concerning Physician and Massachusetts Workmen's Compensation Act. T. K. Richards, Boston.—p. 1121.

Circulation in Capillaries.—The function of the circulating blood is to be the vehicle by means of which the substances necessary to the life of the tissues reach the cells, and through whose agency the waste products of metabolism may be removed from the cells and be disposed of in one way or another. It is in the capillaries that this exchange between the tissues and the blood takes place; and it is because of an abnormal flow of blood through the capillaries in various parts of the body that symptoms of disease arise when the circulation is impaired in whole or in part. Thus heart failure sufficient to cause chronic passive congestion of the viscera is of significance, because the stasis of the blood in the capillaries interferes with the metabolic activities of the organ involved and results in symptoms referable to malfunction of that particular viscus. The blood flow in the capillaries, Boas says, therefore is a measure of the efficiency of the circulation.

192: 1143-1190 (June 11) 1925

Physician as Custodian of Health of People: But Who Shall Guard Custodian Himself? D. Cheever, Boston.—p. 1143.
*Psychotherapy as Practical Measure in Outpatient Work. M. W. Peck, Boston.—p. 1151.
Physiology of Chest. C. C. Stewart, Hanover, N. H.—p. 1157.
Postoperative Acidosis. H. C. Clifton and B. B. Landry, Hartford, Conn.—p. 1161.
*Case of Extreme Ascites. G. G. Sears, Boston.—p. 1160.
Case of Tetanus. W. Galvin, Blackinton.—p. 1161.
How Medicine Can Best Serve. G. W. Haigh, Worcester.—p. 1162.

Psychotherapy in Outpatient Work.—Peck finds it possible to carry out systematic and efficient psychotherapy in outpatient work when the medical personnel is interested in the procedure and the size of the clinic is not too great. Reliance must be placed chiefly on suggestion and persuasion. In many cases a superficial mental analysis aids in the determination of psychogenic mechanisms and is a valuable supplement to other forms of treatment. The degree of success in treatment compares favorably with that achieved in other chronic affections.

Extreme Ascites.—Sears cites a case of ascites in a man, aged 62, from whom 72 quarts of serum were withdrawn. The fluid reaccumulated, and a month later 70 quarts were removed. A third aspiration of almost exactly the same quantity was done four weeks later, after which the man became delirious, and died on the fourth day. A necropsy was not permitted.

California and Western Medicine, San Francisco

23: 673-800 (June) 1925

Status of Neurologic Surgery. H. C. Naffziger, San Francisco.—p. 705.
Surgical Treatment of Diseases of Colon. C. E. Phillips, Los Angeles.—p. 710.
Treatment of Cholecystitis. W. W. Boardman, San Francisco.—p. 714.
Prostatic Median Bar, Complications and Treatment. M. B. Wesson, San Francisco.—p. 720.
Development and Reestablishment of Breast Milk by Use of Dr. Abt's Electric Breast Pump. E. M. Tarr, Los Angeles.—p. 728.
*Lengthening Quadriceps Tendon for Stiff Knee. G. J. McChesney, San Francisco.—p. 732.
Metastatic Bone Marrow Carcinoma. L. C. Kinney, San Diego.—p. 734.
Chinese Herbalist and Medical Practice Act. C. B. Pinkham, San Francisco.—p. 737.

Operation for Stiff Knee.—McChesney describes an operation entailing no risk to important structures, which presents no especial difficulties and will give a flexion range sufficient for all practical purposes in life, and which gets rid of an ugly tiring limp and a position of the limb which is always awkward and in the way, as in sitting in a street car. The operation requires three weeks in bed, after which the patient can be up and about on crutches, and permits a return to light work within three months.

Colorado Medicine, Denver

22: 191-230 (June) 1925

Hay-Fever Plant Survey of City and County of Denver. J. J. Waring, Denver.—p. 194.
High Protein Diet and Intestinal Infection as Etiologic Factors in Arteriosclerosis. N. M. Alter, Denver.—p. 199.
*Bismuth Salicylate in Treatment of Syphilis. S. R. McKelvey, G. K. Dunklee and N. Mumey, Denver.—p. 205.
Preventive Medicine Versus Private Practice. J. A. Wenk, Colorado Springs.—p. 212.
Value of Radiation in Diseases of Cervical Lymph Glands. S. Withers, Denver.—p. 214.
Psychoneuroses and Profession. L. V. Tepley, Denver.—p. 217.
Medical Management of Gallbladder Diseases. M. Printz, Denver.—p. 220.

Bismuth Treatment of Syphilis.—A total of 3,085 injections of bismuth salicylate were given by McKelvey et al. to 218 patients, which lead them to arrive at the following conclusions: Bismuth is an adjunct in the treatment of syphilis and is above mercury, but below arsphenamin in its action. It is better tolerated than mercury. It is less painful than mercury, but causes some discomfort from injection. It is efficient in the so-called Wassermann fast cases. It will clear up primary and secondary manifestations more rapidly than mercury, more slowly than arsphenamin. It can be used in cases with marked renal involvement.

Florida Medical Association Journal, St. Augustine and Jacksonville

11: 213-239 (June) 1925

Encephalitis. B. R. Tucker, Richmond, Va.—p. 227.
Congenital Clubfoot. F. L. Fort, Jacksonville.—p. 231.

Georgia Medical Association Journal, Atlanta

14: 221-265 (June) 1925

Attributes of Heart's Action. W. W. Jarrell, Thomasville.—p. 227.
Treatment of Diabetes and Use of Insulin. T. E. Rogers, Macon.—p. 230.
Abdominal Diagnosis from General Practitioner's Standpoint. W. S. Cook, Albany.—p. 233.
Opaque and Nonopaque Bodies in Gastro-Intestinal and Respiratory Tracts. J. W. Landham, Atlanta.—p. 237.
Bronchial Spirochetosis; Cases. E. E. Murphey, Augusta.—p. 240.
Childhood Tuberculosis and Its Relation to Tuberculosis Problem. E. W. Glidden, Alto.—p. 245.
Fraternalism. H. J. Carswell, Waycross.—p. 248.

Illinois Medical Journal, Oak Park

67: 401-472 (June) 1925

Rickets. L. R. DeBuys, New Orleans.—p. 413.
Traumatic Rupture of Thoracic Aorta; Review of Fifty-Five Abdominal Injuries. L. P. Kuhn, Chicago.—p. 420.
*Intestinal Protozoa and Chronic Diseases with Reference to Chronic Arthritis. J. V. Barrow and E. L. Armstrong, Los Angeles.—p. 427.
Relation of Ethmosphenoiditis to Some Diseases of Eye, Ear and Other Organs. W. M. Thompson, Chicago.—p. 432.
Significance of Colon in Abdominal Distress. J. D. Milligan, Elgin.—p. 436.
Colitis. F. G. Dyas, Chicago.—p. 440.
Major Urologic Considerations. L. D. Smith, Chicago.—p. 442.
Posttraumatic Mental Disorder. C. F. Read, Chicago.—p. 447.
Treatment of Benign Uterine Hemorrhage with Radium. R. A. Scott, Evanston.—p. 455.
Correct Development of Growing Feet to Insure Health. S. C. Woldenberg, Chicago.—p. 458.
Clinical Clues of Value in Early Recognition of Pretuberculosis. M. V. Gunn, Bloomington.—p. 460.

Intestinal Protozoa in Chronic Arthritis.—Barrow and Armstrong stress the fact that the distribution of human protozoal infections is widespread. There is no one symptom by which their presence may be known clinically. They are associated with diseases exhibiting depressive and toxic syndromes as yet unexplained in medicine. They exist essentially in a chronic state. Their eradication is slow, tedious and at times uncertain as is the treatment of chronic diseases. Persistence in treatment with rational honest effort on the part of both physician and patient are necessary to get results.

Journal of Biological Chemistry, Baltimore

64: 1-227 (May) 1925

*Resistance of Antirachitic Substance in Cod Liver Oil to Reagents. C. E. Bills, Baltimore.—p. 1.
*Carbohydrate Metabolism of Tumors. I. Free Sugar, Lactic Acid, and Glycogen Content of Malignant Tumors. C. F. Cori and G. T. Cori, Buffalo, N. Y.—p. 11.
Electrolytic Modification of Gutzeit Method for Determination of Arsenic in Body Tissues. W. E. Lawson and W. O. Scott, Edgewood, Md.—p. 23.
Synthesis of 3, 4, 5-Triiodophenylpyrrolidone Carboxylic Acid, a Possible Isomer of Thyroxin. C. R. Harington, London, Eng.—p. 29.
Biochemistry of Acetone Formation from Sugars by Bacillus Acetoethylicum. H. B. Speakman, Toronto, Canada.—p. 41.
*Method of Obtaining from Veins Blood Similar to Arterial Blood in Gaseous Content. S. Goldschmidt and A. B. Light, Philadelphia.—p. 53.
Papain Lipase. M. Sandberg and E. Brand, New York.—p. 59.
Anthocyanin Formation in Helianthus Annuus. C. E. Sando, Washington, D. C.—p. 71.
*Determination of Small Amounts of Protein Nitrogen. E. R. Main and A. P. Locke, Chicago.—p. 75.
*Effect of Ultraviolet Irradiation on State of Serum Calcium. A. R. Moritz, Cleveland.—p. 81.
Blood Phosphates as Related to Carbohydrate Metabolism. A. Bollinger and F. W. Hartman, Detroit.—p. 91.
*Antiscorbutic Properties of Eggs. S. M. Hauge and C. W. Carrick, Lafayette, Ind.—p. 111.
Adequacy of Synthetic Diets for Growth of Chick. A. G. Hogan, N. B. Guerrant and H. L. Kempster, Columbia, Mo.—p. 113.
Metabolism of Imidazoles. L. Leiter, Chicago.—p. 125.
Combination of Phenol Red and Proteins. A. Grollmann, Baltimore.—p. 141.
*Cause of Ophthalmia in Rats Produced with Diets Containing Vitamin A. E. V. McCollum, N. Simmonds and J. E. Becker, Baltimore.—p. 161.
*Antirachitic Value of Irradiated Cholesterol and Phytosterol. II. Further Evidence of Change in Biologic Activity. A. F. Hess and M. Weinstock, New York.—p. 181.
*Id. III. Evidence of Chemical Change as Shown by Absorption Spectra. A. F. Hess and M. Weinstock, New York.—p. 193.
Modification of Bloor's Method for Determination of Cholesterol in Whole Blood or Blood Serum. G. E. Sackett, Kansas City, Mo.—p. 203.
Determination of Blood Sugar. S. R. Benedict, New York City.—p. 207.
Determination of Uric Acid in Blood. S. R. Benedict, New York.—p. 215.
Simple Method for Obtaining Cutaneous (Capillary) Blood from Infants and Adults for Colorimetric *pH* Determination. P. Drucker and G. E. Cullen, Copenhagen, Denmark.—p. 221.

Chemical Examination of Antirachitic Substances.—The first of a series of experiments on the chemical examination of antirachitic substances is reported on by Bills. It was found that the antirachitic vitamin in cod liver oil is not destroyed by hydrogen dioxid, hydrogen sulphid, sulphur dioxid, or liquor formaldehydi. It is readily destroyed by nitrous fumes, and slowly by direct steam or contact with mineral acids.

Carbohydrate Metabolism of Tumors.—The experiments reported on by Cori and Cori bring forward some evidence that tumor tissue in the living animal splits large amounts of glucose into lactic acid.

Gaseous Content of Blood from Veins.—A method is described by Goldschmidt and Light, and results of its use are presented, by which blood of arterial oxygen content, capacity and carbon dioxid content may be obtained from the veins on the back of the hand, after exposure to hot water.

Determination of Protein Nitrogen.—Main and Locke propose a spectrometric extension of the method of Folin and Denis for the estimation of small quantities of ammonia nitrogen. The extended method permits the use of samples containing as little as 0.005 mg. of protein nitrogen with fair accuracy and with great facility. The field of the method lies in those investigations where only minute quantities of nitrogenous material are available for analysis.

Effect of Ultraviolet Radiation on Serum Calcium.—No changes in the total calcium nor in the percentage of diffusible calcium of the blood serum of normal rabbits were observed by Moritz following ultraviolet irradiation in vitro or in vivo.

Antiscorbutic Properties of Eggs.—The potency of the egg, white and yolk separately, in relation to its prophylactic and therapeutic value in scurvy, was tested by Hauge and Carrick. Egg whites fed to guinea-pigs in quantities as large as 20 c.c. daily delayed the symptoms of scurvy no longer than did the basal ration. Egg yolk proved equally ineffective when given at the rate of 15 c.c. daily. The therapeutic action of egg portions was also negative. All of the guinea-pigs were necropsied, and the presence of scurvy was confirmed.

Cause of Dietetic Ophthalmia in Rats.—Further studies are described by McCollum, Simmonds and Becker on the conditions under which ophthalmia appears in rats taking a diet containing an adequate amount of vitamin A when excessive amounts of certain salts are contained in the diet. It is demonstrated that the ophthalmia cannot be induced by feeding excessive amounts of any one element or iron. The total amount of a salt mixture and its composition, which is included, may be the determining factor as to whether ophthalmia will develop. A former surmise that the ophthalmia was due to excessive amounts of chlorin or possibly of sodium in the diet is proved untenable. As a possible explanation of the experimental results recorded the dual nature of vitamin B is suggested.

Antirachitic Value of Irradiated Cholesterol.—Dry milk, flour and spinach was rendered antirachitic by Hess and Weinstock by radiations from the quartz mercury vapor lamp. This potency was maintained by the spinach after it had been boiled for one-half hour. Oleic acid and egg phosphatid cannot be activated by this means. Irradiated cholesterol was found to prevent rickets when given by the subcutaneous route. A series of tests with selective filters showed that the radiations which render cholesterol active biologically are similar in their wave lengths to those which have been found to protect animals against rickets when they are directly exposed to the rays. Irradiated cholesterol is effective in preventing the rickets brought about by a diet either low in phosphorus or low in calcium. Skin which ordinarily possesses no antirachitic potency develops this quality after irradiation with ultraviolet rays.

Chemical Change in Irradiated Cholesterol.—By means of special absorption tests a chemical change was demonstrated by Hess and Weinstock in cholesterol which had been endowed with antirachitic potency by ultraviolet irradiation. This activated cholesterol absorbs ultraviolet radiations to a less degree than does ordinary cholesterol, an effect which is intensified with increasing degrees of irradiation. If, however, irradiation is prolonged for many hours the activated cholesterol becomes less transparent than even nonirradiated cholesterol. This comparatively opaque product is of a yellowish color and has a lowered melting point.

Journal of Clinical Investigation, Baltimore

1: 403-495 (June) 1925

Factors in Dehydration Following Pyloric Obstruction. J. L. Gamble and S. G. Ross, Baltimore.—p. 403.
Resistance of Immature Erythrocytes to Heat. R. Isaacs, B. Brock and G. R. Minot, Boston.—p. 425.

Plasma Proteins in Relation to Blood Hydration. I. In Normal Individuals and in Miscellaneous Conditions. J. P. Peters, A. J. Eisenman and H. A. Bulger, New Haven, Conn.—p. 435.
*Plasma Proteins in Relation to Blood Hydration. II. In Diabetes Mellitus. J. P. Peters, H. A. Bulger and A. J. Eisenman, New Haven, Conn.—p. 451.
Iodin Studies. I. Avidity of Thyroid for Various Iodin Compounds in Vitro. I. M. Rabinowitch and A. B. Frith, Montreal, Canada.—p. 473.
Effect of Some Pathologic Conditions on Dyspnea During Exercise. I. Artificial Stenosis. A. W. Hewlett, J. K. Lewis and A. Franklin, Stanford University, Calif.—p. 483.

Plasma Proteins in Diabetes Mellitus.—Peters, Bulger and Eiseman report on their observations of the plasma proteins of patients with diabetes mellitus of varying degrees of severity, studied at different stages of the disease. In mild diabetes unassociated with ketosis or malnutrition the plasma proteins are usually normal. In severe diabetes associated with chronic malnutrition, the plasma proteins are usually found reduced. In conditions of severe diabetic toxemia with ketosis the blood becomes concentrated by loss of water. Under these circumstances the plasma proteins appear relatively high. The tissue dehydration which is so striking a part of the picture of diabetic toxemias appears to be closely related to the acidosis. Restoration of the alkali reserve is attended by retention of fluid in the body. True diabetic edema seldom if ever occurs in the presence of acidosis. A definite alkalosis is, however, not essential to the production of edema. The fact that diuresis can be induced by the production of acidosis indicates that the acid-base equilibrium also plays its part in the etiology of the edema. It is suggested that the state of malnutrition may render the subject peculiarly susceptible to the effects of alkali. The common association of low plasma proteins with diabetic edema is probably not one of cause and effect but is a result of the fact that both phenomena are characteristic of severe diabetes without acidosis.

Journal of Comparative Psychology, Baltimore

5: 205-291 (June) 1925

Quantitative Demonstration of Animal Drive. J. F. Dashiell.—p. 205.
Comparison of White and Negro Children by Terman and Yerkes-Bridges Revisions of Binet Tests. D. Sunne, New Orleans.—p. 209.
Emotional Reactions. III. Systolic Blood Pressure and Inspiration-Expiration Ratios. C. Landis and R. Gullette, Minneapolis.—p. 221.
Time Discrimination in White Rats. C. F. Sams and E. C. Tolman.—p. 255.
Thermolinetics of Crematogaster Lineolata (Say). K. C. Pratt, Columbus, Ohio.—p. 265.
Comparisons of White and Negro Children in Certain Ingenuity and Speed Tests. J. Peterson, L. H. Lanier and H. M. Walker.—p. 271.
Hearing of Tortoises. R. Kuroda, Niigata, Japan.—p. 285.

Journal of Industrial Hygiene, Baltimore

7: 185-246 (May) 1925

Lighting in Industries. P. W. Cobb, Cleveland.—p. 185.
Engineering-Hygienic Aspects of Dust Elimination in Mines. D. Harrington, Salt Lake City, Utah.—p. 199.
Unhealthy Barges. W. F. Dearden, England.—p. 215.
Coal Miner: Health, Diseases, and General Welfare. E. L. Collis.—p. 221.

7: 247-292 (June) 1925

Two Years of Industrial Ophthalmology at Pullman Car Works. H. P. Davidson, Chicago.—p. 247.
Recommendations for Controlling Health Hazards in Garages and Automobile Repair Shops. G. M. Burnham, Chicago.—p. 254.
Determination of Suspensoids by Alternating-Current Precipitations. P. Drinker and R. M. Thomson, Boston.—p. 261.
Determination of Small Amounts of Zinc in Materials of Organic Nature: Michrochemical Method Based on Fluorescence of Zinc Salts with Urobilin. R. E. Lutz, Boston.—p. 273.

Journal of Nervous and Mental Disease, New York

61: 561-676 (June) 1925

Somatic Pathology and Psychopathology at Encephalitis Crossroad. S. E. Jelliffe, New York.—p. 561.
Nature of Abdominal Reflexes. M. Astwazaturow, Leningrad, Russia.—p. 587.
*Extensive Brain Hemorrhage. N. W. Winkelman, Philadelphia, and J. L. Eckel, Buffalo.—p. 593.

Extensive Brain Hemorrhage Not Immediately Fatal.—From a study of thirty cases, with necropsy, Winkelman and Eckel feel that cerebral hemorrhage does not always cause immediate death, that is, in less than one hour, even when the hemorrhage is into the pons or into the ventricles.

Journal of Radiology, Omaha

6: 173-212 (May) 1925

Ultraviolet Therapy in Surgical and Gynecologic Work. A. D. Willmoth, Louisville, Ky.—p. 173.
Mercury Ion in Gynecology. G. B. Massey, Philadelphia.—p. 180.
Indications for Use of Ultraviolet Energy in Medicine. L. C. Donnelly, Detroit.—p. 183.
Roentgen-Ray Diagnosis of Chronic Pancreatitis and Its Relation to Common Skin Diseases. W. A. Quimby, Wheeling, W. Va.—p. 186.
Gallbladder Disease Treated by Sine Wave and Diathermia. J. G. Walsh, Woodbine, Iowa.—p. 188.

6: 213-255 (June) 1925

Selective Action of Dyes Used in Medicine. E. C. Folkmar, Washington, D. C.—p. 213.
Roentgen-Ray Therapy of Infective Tonsils and Adenoids. J. H. Wesley, Newmarket, Ontario.—p. 221.
Epithelioma of Face, Head and Neck. A. L. Yocom, Jr., Charlton, Iowa.—p. 224.
Pulmonary Tuberculosis and Tuberculous Peritonitis Treated by Actinic Ray. J. G. Walsh, Woodbine, Iowa.—p. 229.
Radiation in Female Pelvis. D. Y. Keith, Louisville, Ky.—p. 232.

Kansas Medical Society Journal, Topeka

25: 169-206 (June) 1925

Beating the Quack A. O'Donnell, Ellsworth.—p. 169.
Modern Pathology in General Practice. H. R. Wahl, Kansas City, Kan.—p. 172.
Cause and Treatment of Arterial Hypertension. R. H. Major, Kansas City, Kan.—p. 177.

Kentucky Medical Journal, Bowling Green

23: 255-312 (May) 1925

Case of Intra-Ocular Melanosarcoma. R. W. Blesoe, Covington.—p. 264.
Tendon Transplantation of Eye Muscles. J. H. Hester, Louisville.—p. 265.
Lateral Sinus Thrombosis. C. T. Wolfe, Louisville.—p. 266.
Milk Injections in Eye Infections. R. H. Cowley, Berea.—p. 270.
Trachoma. L. P. Molloy, Paducah.—p. 272.
Tonsillectomy Under Local Anesthesia. O. Dulaney, Louisville.—p. 273.
Contraindications for Operation of Senile Cataracts: Fatality. F. Phinizy Calhoun, Atlanta.—p. 275.
Suggestions on Threatened Dangers. J. A. Stucky, Lexington.—p. 270.
Poliomyelitis Associated with Hysterical Manifestations: Case. J. J. Moren, Louisville.—p. 280.
Pupils in Diagnosis. A. Pfingst, Louisville.—p. 282.
Vagino-Rectal Anomaly; Sigmoidal Diverticulitis: Case. L. Frand, Louisville.—p. 287.
Preventive Medicine in First Year of Life. J. W. Burce, Louisville.—p. 288.
Postoperative Intestinal Obstruction. G. A. Hendon, Louisville.—p. 292.
Relapsing Purpuric Eruption. B. C. Frazier, Louisville.—p. 294.
Results of Treatment of Tuberculosis at Hazelwood. S. W. Bates, Louisville.—p. 295.
Factors Influencing Increase of Cancer in Kentucky. F. W. Rankin, Lexington.—p. 301.
Radiotherapy of Tubercular Adenitis. D. Y. Keith and J. P. Keith, Louisville.—p. 304.

Michigan State Medical Society Journal, Grand Rapids

24: 275-344 (June) 1925

Management of Goiter—Primary Hyperthyroidism or Exophthalmic and Adenomata with Hyperthyroidism or Thyrotoxic Type. C. D. Brooks, Detroit.—p. 275.
Human Milk; Factors in Its Production. B. R. Hoobler, Detroit.—p. 279.
Problems in Gynoplastic Surgery. A. M. Campbell, Grand Rapids.—p. 280.
*Prenatal Maternal Heart. A. E. van Nest, Detroit.—p. 284.
Trend of Health Education Among School Children. M. Chayer, Saginaw.—p. 286.
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. B. Downey, Pittsburgh.—p. 289.
Clinical Significance of Acidosis and Alkalosis. D. J. Leithauser, Detroit.—p. 291.
Repetition of Tubal Pregnancy in Opposite Tube—Double Vagina. C. A. van Dusen and A. E. Lamley, Blissfield.—p. 293.
*Intestinal Bacteriophage or Lytic Principle in Scarlet Fever and Chickenpox. D. M. Cowie, J. P. Parsons and H. Poncher, Ann Arbor, Mich.—p. 294.

Prenatal Maternal Heart.—During 1923 at Station 1 of the prenatal clinic of the Detroit Department of Health, with an attendance of 1,347 new prenatal patients there were 151 heart conditions of various severity. Functional murmurs were present in eighty cases; mitral regurgitation, twenty-five cases; mitral stenosis, five cases, and a lesser number of cases of other conditions.

Bacteriophage in Stools of Scarlet Fever Patients.—Cowie, Parsons and Poncher find that a bacteriophage or lytic principle develops quite uniformly and characteristically in the stools of scarlet fever patients, seldom in those of chickenpox patients. In scarlet fever the lytic principle was active for *B. coli, B. dysentery* (Shiga and Flexner) *B. typhosus, B. paratyphoid* A and B. It had no lytic effect on hemolytic streptococci isolated from the throats of scarlet fever patients.

Military Surgeon, Washington, D. C.

56: 641-767 (June) 1925

Tactics of Medical Detachment. T. L. Rhoads.—p. 641.
Infection of War Wounds by Diphtheria and Diphtheroids. W. M. Brickner.—p. 683.
Cytologic Diagnosis of Dysenteric Conditions and Its Application in Military Service. G. R. Callender.—p. 686.
Reminiscences of Early Days on Isthmus. D. N. Carpenter.—p. 700.
New Motor Ambulance Body to Carry Six Litter Cases. J. P. Fletcher. —p. 708.
Venereal Prophylaxis in Italian Army. F. Piccininni.—p. 737.
1924 Annual Physical Examination of Officers on Duty in Philippine Islands. J. F. Siler.—p. 738.

Missouri State Medical Association Journal, St. Louis

22: 203-240 (June) 1925

Essentials of Gynecologic Examination. R. S. Tilles, St. Louis.—p. 203.
Obstetric Problems. W. C. Gayler, St. Louis.—p. 206.
Pertinent Facts About Thyroid. F. Reder, St. Louis.—p. 208.
Subungual Exostoses. J. G. Probstein and B. Brooks, St. Louis. —p. 211.
Use of Magnesium Sulphate with Morphin-Hyoscin in Labor. R. Paddock, St. Louis.—p. 214.
*Importance of Repeated Examinations of Sputum and Use of Antiformin Method. L. Schlenker, St. Louis.—p. 216.
Brain Abscess of Otitic Origin. W. D. Black, St. Louis.—p. 218.
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. B. Downey, Pittsburgh.—p. 221.

Importance of Repeated Examination of Sputum.—By repeatedly examining specimens of sputum, taken at intervals, tubercle bacilli were found by Schlenker in fifteen cases in which the first specimen examined showed no bacilli. Antiformin digestion of the sputum followed by centrifugalization and examination of the sediment revealed tubercle bacilli which could not be seen in the simple smear in twenty-two cases. The antiformin method was more efficient by 9 per cent. It was particularly efficient in patients who expectorated few bacilli and these at intervals.

Nebraska State Medical Journal, Norfolk

10: 193-236 (June) 1925

Medical Education and Family Doctor. P. Findley, Omaha.—p. 193.
Epidemiology of Streptococcus Sore Throat. J. J. Keegan, Omaha. —p. 200.
Oral Focal Infections Related to Systemic and Degenerative Diseases. L. J. Swanbom, Scottsbluff.—p. 203.
Modern Aspects of Nutrition. V. E. Levine, Omaha.—p. 208.
Poliomyelitis from Standpoint of Neurologist. G. E. Neuhaus, Omaha. —p. 211.
Carcinoma of Vulva: Case. M. Emmert, Omaha.—p. 216.
Surgeon's Relation to Newspaper. J. W. Duncan, Omaha.—p. 218.
Group Practice in Smaller Communities. D. D. King, York.—p. 220.
Fractures of Lower Third of Leg. J. E. M. Thomson, Lincoln.—p. 222.

New Jersey Medical Society Journal, Orange

22: 189-230 (June) 1925

Recognition of Early Renal Disease. N. B. Foster, New York.—p. 189.
Clinical Microscopy of Living Eye. E. J. Marsh, Paterson.—p. 195.
Influence of Physical Causes on Moral Faculties. G. K. Dickinson, Jersey City.—p. 200.
Meningitis and Brain Abscess. T. R. Chambers, Jersey City.—p. 209.

New York State Journal of Medicine, New York

25: 755-824 (June) 1925

Doctor of Future. G. E. Vincent, New York.—p. 758.

Northwest Medicine, Seattle

24: 211-260 (May) 1925

*Technic for Simultaneous Implantation of Right and Left Ureters into Pelvic Colon Which Does Not Obstruct Ureters or Disturb Kidney Function. R. C. Coffey, Portland, Ore.—p. 211.
Arguments in Favor of Parasitic Etiology of Carcinoma. M. J. Scott, Butte, Mont.—p. 215.
Sacral Anesthesia. A. A. Matthews, Spokane, Wash.—p. 220.
Block Anesthesia in Nasal Surgery. J. G. Parsons, Lewistown, Mont. —p. 223.
Treatment of Tuberculosis of Spine on Bent Bradford Frame. H. J. Wyckoff, Seattle.—p. 227.
*Treatment of Psoriasis. W. H. Goeckerman, Rochester, Minn.—p. 229.
Hemorrhagic Pachymeningitis; Six Cases. G. W. Swift, Seattle.—p. 232.
Diagnosis and Treatment of Peptic Ulcer. O. M. Nisbet, Portland, Ore. —p. 235.
Diagnosis and Treatment of Female Sterility. R. E. Watkins, Portland, Ore.—p. 239.
Prolongation of Life. M. W. Thewlis, New York.—p. 245.
Child Hygiene and Physician. G. J. Mohr, Seattle.—p. 247.
Syphilitic Register. W. J. Pennock, Spokane.—p. 248.

Transplantation of Ureters.—Experimental and clinical observation teaches that for a period of time, varying from three to seven days, after the implantation of a duct into the intestine, the edema in the field of operation blocks the duct and therefore obstructs the function of the organ. Therefore, a fundamental point in the technic of implantation of both ureters at the same sitting is that the urine shall be conducted past the field of operation by a noncollapsible tube until the local postoperative edema shall have subsided. Usually this is from three to six days in case of a ureter. This fundamental necessity is met in the technic described by Coffey. He places rubber tubes in the ureteral lumen.

Treatment of Psoriasis.—Goeckerman favors the use of White's crude coal-tar ointment, applied to the patches for twenty-four hours, and removed with olive oil, postponing vigorous cleansing efforts until after the lesions have been exposed to the ultraviolet quartz light. The light is usually applied for one minute at a distance of 30 inches, and the time of exposure is increased one minute daily for three or four days. If the patient then shows no signs of reactivity, the time is rapidly increased and the distance decreased. An effort is made to avoid any marked reaction, but tanning should be produced as rapidly as possible. The use of the crude coal-tar preparation alone, or that of the quartz lamp alone, has not given results comparable to the combined use of the two agents.

24: 261-308 (June) 1925

Varying Mechanism of Uterine Bleeding. E. Novak, Baltimore.—p. 261.
Diagnosis and Treatment of Diabetes Mellitus. L. T. Nelson, Portland, Ore.—p. 265.
Glucose Metabolism. C. H. Hofrichter, Seattle.—p. 271.
Few Why's in Dietetics. C. V. Genoway, Boise, Idaho.—p. 277.
Gastric Carcinoma. J. M. Blackford, Seattle.—p. 280.
*Stricture of Rectum as an Indirect Cause of Pellagra; Case. T. M. Joyce and D. B. Seabrook, Portland, Ore.—p. 284.
*Cardiolysis for Adherent Pericardium. A. O. Loe, Seattle.—p. 285.
Indications and Technic for Removal of Excessive Subcutaneous Abdominal Fat. A. P. Heineck, Chicago.—p. 287.
General Aspects of Public Charity and Problems Involving Medical Profession. C. J. Lynch, Yakima, Wash.—p. 291.

Stricture of Rectum as Indirect Cause of Pellagra.—In the case reported by Joyce and Seabrook the lesion did not interfere with assimilation but did, because of its nature, cause the patient voluntarily to choose an inadequate diet which eventually brought on pellagra.

Cardiolysis for Adherent Pericardium.—The clinical result of cardiolysis for adherent pericardium in the case reported by Loe has proven very good. Such a favorable outcome was no doubt due to the fact that it was a very early case, with recent signs of incipient cardiac incompetency; when the mechanically embarrassing structures were removed, the heart promptly recovered through its efficient cardiac reserve.

Occupational Therapy and Rehabilitation, Baltimore

4: 171-234 (June) 1925

Occupational Therapy for Orthopedic Patient Crippled by Chronic Diease. L. T. Swaim and M. Taylor, Baltimore.—p. 171.
Orders for Treatment and Procedure. M. Taylor, Boston.—p. 177.
Two Practical Suggestions for Occupying Desperate Cases. S. E. Tracy. —p. 181.
Kindergarten Class in Mental Hospital. M. E. Gustafson, Chicago. —p. 185.
Hospital Pre-Industrial Shop. T. B. Kidner.—p. 187.

Oklahoma State Medical Association Journal, Muskogee

18: 120-153 (June) 1925

For Good of Order. P. P. Nesbitt, Muskogee.—p. 120.
Thrombosis; Coronary Thrombi. H. T. Ballantine, Muskogee.—p. 122.
Chlorin Gas in Respiratory Diseases. J. C. MacDonald, Oklahoma City.—p. 125.
Intracranial Hemorrhage in New-Born. C. M. Pounders, Oklahoma City.—p. 126.

Surgery of Prostate L A Hahn, Guthrie —p 128
Achievements of Modern Urology. E. L Cohenour, Tulsa —p 130
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. B Downey, Pittsburgh —p 132.

Philippine Islands Medical Association Journal, Manila

5: 137-156 (May) 1925

Aneurysm of Heart; Case M P. Mendoza Guazon —p 137.
Medicolegal Significance of Rupture of Heart. P. Anzures and S. de los Angeles —p 141.
Lipoma of Descending Colon, Sigmoid Flexure, Rectum and Corresponding Mesentery. C. D Franco.—p. 144.

Rhode Island Medical Journal, Providence

8: 87-102 (June) 1925

Congenital Myxedema L I Kramer, Providence —p 87.
Roentgen Rays in Treatment of Various Inflammatory Conditions. S. Albert, Providence —p 90

Southwestern Medicine, Phoenix, Ariz.

9: 213 254 (June) 1925

Surgery of Tuberculous. J D. Brooks, Fort Whipple, and C. E. Yount, Prescott —p 213
Pulmonary Tuberculosis Complicated by Asthma E. W. Phillips, Phoenix —p 215
Primary New Growths of Lung V Randolph, Phoenix —p 218
Intestinal Obstruction V. M. Gore, Tucson —p 220
Infected Tonsils as Cause of Thyrotoxicosis H T Bailey, Phoenix —p 223.
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. B Downye, Pittsburgh —p 225
Bronchiectasis. R J Callander, Tucson —p 226
Malaria Control by Quinin E. C Houle and H. A. Harris, Sonora, Mexico —p 229
Tularemia Infection of Conjunctiva A Martin, Phoenix —p 232.
Treatment of Syphilis. W. A. Pusey, Chicago —p 232.

Virginia Medical Monthly, Richmond

52: 69 138 (May) 1925

Tetany with Thymus Gland Enlargement. L. Davis, Roanoke.—p. 69.
Roentgen Ray Treatment of Enlarged Thymus in Children. J. T. McKinney, Roanoke —p 71
Clinical Significance of Changes in Blood Chemistry. W. H. Higgins, Richmond —p 76
Surgical Treatment of Unilateral Pulmonary Tuberculosis. S S. Gale, Roanoke —p 80
Delayed Secondary Hemorrhage Following Tonsillectomy. J. W White, Norfolk —p 85
Rational Treatment of Pneumonia W T Vaughan, Richmond —p 88.
*Eclampsia Nutans (Salaam Convulsions); Case. S Newman, Danville. —p 92
Vincent's Angina or Ulceromembranous Tonsillitis. W. M. Bowman, Petersburg —p 94
Case of Enormously Enlarged Esophagus B P Seward, Richmond —p 98
Roentgen Ray Diagnosis in Gastric and Duocenal Ulcer. L F Magruder, Norfolk.—p 100.
Medical Profession W E Warren, Williamston, N C —p 102.
Massive Excision of Subcutaneous Abdominal Fat A. P. Heineck, Chicago — p 106
Traumatic Rupture of Intestine; Case B. F Eckles, Richmond —p 112.
Management of Pregnancy. C. P Obenschain, New Hope —p 113.
Ethylene J H Goldman, Richmond —p 117
*Case of Bilateral Tubal Pregnancy H. E Jordan and I. A. Bigger, University —p 116
Lesson Taught by Over Two Hundred Thousand Injections of Arsenicals T L Driscoll, Richmond —p 117.

Eclampsia Nutans.—Newman reports the case of a child, aged 18 months, which when aroused, sat up on the bed and fell over on her face in a series of six or eight motions, extending the upper arms somewhat rigidly outward and backward. The child did not pass any urine or feces during or after this convulsion or spasm

Bilateral Tubal Pregnancy.—In the case reported by Jordan and Bigger the right tube contained a well preserved, apparently normal embryo of 13 mm. length attached by a clear, delicate umbilical cord to a compact mass of normal chorionic villi. The left tube had ruptured. No embryo was recovered from this tube. The embryo had probably suffered resorption, as had also the placenta, under pressure of the blood clot. Evidence present indicated that the pregnancies in both tubes were of approximately the same age, about seven weeks, and the result of a coincident fertilization. The patient was 31 years of age, and the mother of six children. Nothing in the clinical history, nor the anatomic conditions observed at operation, furnished the slightest clue to account for the tubal implantations.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted

British Journal of Radiology, London

30: 155-196 (May) 1925

Direct Measurement of Radiation Received by Tissues. L. Mallet.—p 155.

British Medical Journal, London

1: 1065-1114 (June 13) 1925

Problems of Thyroid Disease. R McCarrison —p 1065.
Duodenal and Gastric Ulceration. T. P. Dunhill —p 1069.
*Comparison of Dried, Evaporated and Fresh Cow's Milk. G. A. Hartwell —p 1073.
*Etiology of Pernicious Anemia A. C. Alport —p 1075.
*Gallstones in Adolescents M. A Key —p 1077.
Bilateral Twisted Ovarian Cysts. J A Prichard.—p. 1077.

Comparison of Dried, Evaporated and Fresh Cow's Milk.—Hartwell's experiments lead her to conclude that dried and evaporated milks possess quite different dietetic values, and that the dried milk approximates more closely to fresh cow's milk than does evaporated milk.

Etiology of Pernicious Anemia.—The fact of importance which arises out of Alport's experiments is that an extract can be obtained from blood by means of the alcohol-fractional precipitation method. The substance is freely soluble in water, is nontoxic, and apparently has some effect in increasing blood formation. A similar effect was observed on giving a series of intravenous injections to a patient with pernicious anemia in a remission stage.

Gallstones in Adolescents.—Key reports the case of a girl, aged 15, who had an acute cholecystitis. On opening the gallbladder, thickened bile with 150 small faceted stones and two larger ones, measuring one-fourth and one-half inch, respectively, were found.

Calcutta Medical Journal

20: 363 414 (April) 1925

Antagonistic Action of One Chemical Substance Against Another as Regards Their Effects on Microbes in Vitro H. Ghosh —p 363.
Surgery of Ancient Hindus S K Ray.—p 372.
Medical Examination of Students of Presidency College, 1924. J. N. Maitra —p. 382.
"Atrophia Cutis Idiopathica Progressive"; Case. A Gupta —p 386
Jaundice Showing Round Worms in Liver and Gallbladder. J. N. Maitra —p 400.
Acute Streptococcal Nephritis. S C Bose —p 391.
Case of Gallstone Colic S C. Bose —p 394

Glasgow Medical Journal

21: 229 388 (June) 1925

Acute Abdomen J. Ritchie —p 329.
Acute Abdomen. W. W Galbraith —p 338
*Undescended Cecum A. B MacLean —p 352
Dental Focal Infection and Its Diagnosis by Roentgen Rays C. Read. —p 356
Lymphatics of Heart: Hunterian Memorandum. D M Blair.—p. 363.

Undescended Cecum.—The incidence of undescended cecum for infants is given by MacLean as 6 per cent. but the adult incidence is probably less, since in infants the abdominal viscera have by no means reached the final adult position. This conclusion is based on 1,050 necropsies on infants for the most part under 3 months of age

Indian Journal of Medical Research, Calcutta

12: 609 829 (April) 1925

*Rat Bite Fever. M. J Parmanand —p 609
*Lathyrism. I. L A P. Anderson, A. Howard and J. L Simonsen. —p 613.
Pathogenic Material Examination W. F Harvey —p 645
*Quantity of Urea Stibamine, "471" (Von Heyden) and Stibamine Glucoside Required for Complete Treatment of Kala Azar. E D. W. Greig and S Kundu —p 679
Two Cases of Kala Azar Resistant to Treatment. E. D W. Greig and S Kundu.—p 689.
*Glycosuria and Blood Sugar Content in Kala-Azar. E D. W. Greig and S Kundu —p 695
Indian Species of Genus Phlebotomus XI. Rôle of These Insects as Carriers of Disease J. A Sinton —p 701.
Economical Use of Alum in Mechanical Filters. A. D. Stewart and R. S V. G Raju.—p 731.

*Chemotherapy of Antimonial Compounds in Kala-Azar Infection. XIV. Cases of Kala-Azar Treated with Urea Stibamine During Course of Thirty Two Hours to Seven Days. U. N. Brahmachari and B B. Maity —p 735.
Simple Method of Breeding Sandflies. R O A Smith.—p 741
New Endemic Focus of Kala Azar in Southern India. J Cunningham and S R. Pundit —p 743.
*Environment Associated with Kala Azar Prevalence in Calcutta L E. Napier —p 755.
*Rôle of A Rossii as "Carrier" of Malaria. C. A Gill —p 773
*Commercial Preparation of Neutral Soft Soap. A D. Stewart and N L Banerjee —p 783.
Indian Species of Genus Phlebotomus XII Phlebotomus Argentipes Annandale and Brunetti, 1908 J A. Sinton.—p 789
Id. XIII. Methods of Collection and Preservation. J. A. Sinton. —p 801.
Effect of Formalin on Snake Venom I. Diminution of Toxicity of Cobra Venom. C. Martin —p 807.
"Blood Meal" of Phlebotomus Argentipes Identified by Precipitin Antiserums. R. B Lloyd, L E. Napier and R O A. Smith —p 811.

Spirochetes in Rat-Bite Fever.—The spirochetes found by Parmanand in his Bombay cases of rat bite fever are morphologically identical with those of the Japanese. Unlike other spirochetes, they are difficult to detect by the dark ground illumination method. It is more easy to demonstrate them by staining methods than by dark illumination. The lesser bandicoot (*N. bengalensis*) is the chief reservoir of infection in Bombay. Spirochetes isolated from naturally infected rats were morphologically indistinguishable from those isolated from human cases of rat bite fever.

Lathyrism.—The seeds of khesari (*Lathyrus sativus* L.) have been found, on chemical examination made by Anderson, Howard and Simonsen to be free from substances of an alkaloidal nature. An examination of the weeds which contaminate khesari has proved that akta (*Vicia sativa* L var. *angustifolia*) contains bases showing alkaloidal properties. Two such bases, vicine and divicine, and a cyanogenetic glucoside vicianin, have been isolated, prepared in the pure state, and used in inoculation experiments on animals Divicine, which occurs in akta in combination with a sugar as the glucosid vicine, produces, on inoculation in guinea-pigs, a characteristic and fatal disease. Akta, when fed to ducks, causes death. In monkeys, it produces a very characteristic train of symptoms affecting the nervous and muscular systems. Though certain of the symptoms occurring in monkeys fed on diets containing akta have been described in cases of human lathyrism, it is not yet possible to state, in the absence of pathologic proof, that akta is the cause of lathyrism in man.

Treatment of Kala-Azar by Urea Stibamine.—The amount of urea stibamine required for a complete treatment of kala-azar, according to Greig and Kundu, varies with the age of the patient from 2 to 6 gm., the smaller doses being given to young patients and the larger ones to older patients.

Blood Sugar in Kala-Azar.—Observations made by Greig and Kundu on the blood sugar content in kala-azar show this to be rather low, especially in cases with marked enlargement of the liver.

Urea Stibamine in Kala-Azar.—Brahmachari and Maity cite twenty-seven cases of kala-azar collected from various sources in which a cure was brought about in from thirty-two hours to seven days after treatment with urea stibamine.

Sandfly Transmits Kala-Azar.—On the whole, the balance seems to be slightly in favor of the sandfly as the transmitter of kala-azar, as far as the survey made by Napier is concerned, and, although different varieties have different feeding habits, the sandfly is better known as a human blood feeder than either the culicoides or plant-sucking bugs The infrequency of the occurrence of the disease among better class Europeans living in the sandfly zone could easily be accounted for by the fact that they almost always live in light, airy rooms and, for a greater part of the year, under electric fans.

Anopheles Rossii Does Not Carry Malaria.—Under experimental conditions *A. rossii* Giles failed to become infected when fed on cases of malignant tertian malaria, while "control" experiments with *A. stephensi* and *A. culicifacies* yielded positive results.

Neutral Soft Soap.—Stewart and Banerjee assert that a cheap and practically inodorous soft soap can be manufactured from fish oil by running the oil into an excess of hot potassium hydrate lye gradually and diluting, boiling the mixture and subsequently blowing air through it. The excess of alkali in the soap can easily be neutralized by adding ammonium chlorid, 28 per cent. in excess of the theoretical amount.

Indian Medical Research Memoir, Calcutta

3: 1-105 (Dec.) 1924

Provisional List and Reference Catalogue of Anophelini S R Christophers —p 1.

Journal of Tropical Medicine and Hygiene, London

28: 185-200 (May 15) 1925

Yellow Fever Research, 1918-1924 H. Noguchi —p 185
British Indians and Bilharzia Disease F G Cawston —p 193.

28: 201 216 (June 1) 1925

Immunologic Relationships of Leptospira Group of Spirochetes T Battistini —p. 201
Tropical Otolaryngology Especially in Philippines A. S Fernando and F Nicholas Fernando, Manila —p 202
Prophylaxis in Malaria H. A Spencer —p 207.

Lancet, London

1: 1279 1330 (June 20) 1925

Local Public Health Administration. A Newsholme —p 1279
Interpretation of Electromyogram E. D Adrian —p 1282.
Problem of Malignancy A E Barclay —p 1286
Cutaneous Myiasis in Man Caused by Musca Domestica. W S Patton and H A. Cookson —p 1291.
Artificial Induction of Leukocytosis. B Ferguson and G R. S Thomas —p 1292

Medical Journal of Australia, Sydney

1: 527-554 (May 23) 1925

"Aspects of Infantile Paralysis" C. P B Clubbe.—p 527
Epidemiology and Administrative Control of Anterior Poliomyelitis R Dick —p 536
Two Cases of Katatonic Stupor. E. J. T Thompson —p 541
Case of Anergic Stupor. J. Bentley —p 542

1: 555 580 (May 30) 1925

Fractures of Lower Extremity. G. Bell —p 555.
Possibilities of Cancer Research W Moppett —p 560
Counterirritation and Increased Visceral Function F Trinca —p 564
Schmerz Hook in Fracture of Lower End of Femur R H Bridge —p 565
Traumatic Nonjacksonian Epilepsy A Murphy —p 566
Myxomatous Neoplasm of Mastoid Region. H H Johnston —p 566
Pneumococcal Arthritis P. L Hipsley.—p. 567.

Naval Medical Association Bulletin, Tokyo, Japan

November, 1924

Dietetic Treatment of Severe Forms of Diabetes T. Yukimori —p 1
Energy Metabolism in Various Kinds of Work Assigned for Raw Recruits in Japanese Navy M Kikuchi and T Matsuda —p 1
Fracture of Tarsus. K. Kuroiwa and R Suzuki —p 2
*Dysenteric Cases Admitted into Sasebo Naval Hospital in 1923 B Yamaguchi —p. 2.
Vitamin Content in "Nukamiso" and "Sakekasu" M Kobayashi —p 2.

Bacteriology of Dysentery.—Yamaguchi carried out bacteriologic examinations on seventy-two acute cases of dysentery. The bacilli were found in forty-one cases, of which two were of Shiga type, sixteen of Y type of Hiss, twenty-two of Flexner, and one Flexner which did not split mannite He was able to obtain bacteriophage by treating the isolated bacilli with trypsin.

February, 1925

Immunologic Significance of Gelatin T Kishikawa —p 5
Enzyme Action of Pus S Imokawa —p 5
Changes in Viscera of Animals Thrown from Aeroplane T. Wakatsuki and Y. Ishiguro —p 6
*Causes of Pleuritis S Kudo —p 6.
Heat Testicle. N. Fukui —p. 7.

Cause of Pleuritis.—Kudo found that inflammation of the pleura occurs in animals which have done severe work or in those which worked with some burden on the back and with a bound chest. Animal experiments also show that rapid wetting or cooling of the body markedly lowers the body temperature and then after several hours the animal either gradually recovers or has a fever. A majority had albuminuria and inflammation of the pleura.

May, 1925

Action of Enzymes. M. Kobayashi.—p. 9.
Relation of Properties and Constituents of Japanese Wine "Sake." M. Kobayashi.—p. 9.
*Influence of Endo's Fuchsin Medium on Agglutinability of Bacillus Paratyphoid A. T. Kishikawa.—p. 9.
*So-Called Bacillus Paratyphoid C. T. Kishikawa.—p. 10.
*Histiocytes in Blood with Vital Staining Method in Test Tube. T. Ueyonahara.—p. 10.

Paratyphoid A Bacillus Studies.—Kishikawa noticed that sometimes the agglutinability of paratyphoid A bacillus grown on Endo medium is markedly decreased, and this is attributed to fuchsin. He further found that this decrease is prevented if fuchsin is added to the medium in the amount of three fifths of the original formula.

Bacillus Paratyphoid C.—Kishikawa reports on a study of biologic characteristics of the London strain of paratyphoid C organisms.

Histiocytes in Blood.—Ueyonahara stained fifty bloods obtained from twenty-one patients and twenty-nine healthy men. Blood histiocytes were demonstrated in all of them. Therefore, he concludes that histiocytes are normal constituents of human blood.

South African Medical Record, Cape Town

23: 201-220 (May 23) 1925

Bismuth in Treatment of Syphilis. H. Gluckman.—p. 203.
Plea for Reviving Operation of Couching. G. L. Johnson.—p. 209.
Treatment of Paralytic Ileus by Hormonal and Neohormonal. S. N. Sennett.—p. 210.
Peritonitis. L. Gordon.—p. 210.

Tubercle, London

6: 417-472 (June) 1925

Serologic Classification of Mammalian and Avian Tubercle Bacilli. A. S. Griffith.—p. 417.
Rate of Dissemination of Virulent Tubercle Bacilli in Normal and Immune Guinea-Pigs. A. K. Krause and H. S. Willis.—p. 438.
Tuberculous Infection and Tuberculosis as Modified by Experimental Pneumonokoniosis. L. U. Gardner.—p. 443.

Annales de Médecine, Paris

17: 437-559 (May) 1925

Myasthenia and the Vegetative System. G. Marinesco.—p. 437.
*Case of Amyotrophic Lateral Sclerosis. A. Souques.—p. 463.
*Enuresis. J. A. Sicard.—p. 470.
*Unilateral Amyotrophic Sclerosis. Barré and Morin.—p. 478.
General Paralysis and Trauma. O. Crouzon.—p. 484.
Dissociated Thalamus Syndromes. J. Lhermitte.—p. 488.
Ataxia with Thermal Anesthesia. Foix and Valière-Vialeix.—p. 502.
Tumors in Cerebellopontile Angle. G. Guillain et al.—p. 525.
Diabetes Insipidus of Traumatic Origin. Roussy and Lévy.—p. 548.

Amyotrophic Lateral Sclerosis of Fifteen Years' Duration.—In the case observed by Souques in a young woman, bulbar symptoms had been noted for nine years and cardiac disturbances for seven years, and the patient is still living. The long course of the disease may be explained by a congenital resistance of the motor neurons.

Pathogenesis of Nocturnal Incontinence of Urine.—Sicard considers enuresis as a local spasm, due to hypervagotonia of the pelvic plexus. He has observed cases in which the incontinence disappeared when asthma, eczema or an infectious disease appeared, or vice versa. Five drops of a solution of 0.01 gm. of atropin sulphate in 10 gm. of water, before retiring, is advised for children between 4 and 10. The dose should be increased every two days, up to ten or twenty drops. The remarkable efficacy of this treatment he regards as convincing proof of the excessive irritability of the vagus innervation of the bladder. Subcutaneous injections of epinephrin and pituitary extracts gave good results in two adolescents with enuresis. Organotherapy, especially thyroid extract, may be efficient. In cases of enurésis with changes in the urinary acidity, phosphates and sodium bicarbonate are successfully used. Enuresis with local affections may yield to an operation. Epidural injection of iodized oil is a helpful adjuvant in the treatment.

Unilateral Amyotrophic Sclerosis from Tumor in Rolandic Area.—Referring to their case in a girl, aged 18, Barré and Morin assert that a cortical lesion in the rolandic region, especially in the ascending frontal convolution, may induce a syndrome similar to Charcot's disease but localized on one side. Death occurred ten months after the first symptoms, and necropsy disclosed the brain tumor on the other side.

Archives de l'Institut Pasteur de Tunis

14: 149-246, 1925

*"Unapparent Infections." C. Nicolle.—p. 149.
Filtrability of Typhus Virus. Nicolle and Lebailly.—p. 213.
Idem. C. Nicolle and G. Blanc.—p. 222.
"Micrococcus Melitensis in Human Milk." E. Burnet.—p. 246.

"Unapparent Typhus."—In his study of experimental typhus in the guinea-pig, Nicolle found that while certain animals inoculated with typhus virus presented no clinical symptoms, during the usual febrile period their blood displayed a virulence equal to that in guinea-pigs with characteristic typhus. Further experiments revealed this afebrile form, exceptional in guinea-pigs, to be the rule in rats. "Unapparent infection" (Nicolle and Lebailly) is an acute disease, a septicemia, with incubation period, regular course and recovery, which leaves a more or less durable immunity, and represents the lightest form of the infection. It is entirely different from latent infection. The unapparent typhus of guinea-pigs is a representative of a world of subpathology that has hitherto escaped detection, but now opens a promising field for research and practical serotherapy.

Archives de Médecine des Enfants, Paris

28: 273-336 (May) 1925

Cases of Leishmaniasis in France. D'Oelsnitz et al.—p. 273.
Eruptions in Infancy. Veyrières and M. Guibert.—p. 287.
Multiple Congenital Contracture. P. Woringer.—p. 300.
*Association of Varicella with Herpes. Gautier and Peyrot.—p. 306.
Polyserositis in Children. J. Comby.—p. 308.

Coexisting Chickenpox and Herpes Zoster.—Gautier and Peyrot treated this case in a girl, aged 5. They assume that the two affections are not of common origin, but were casually associated in the patient.

Revue de Chirurgie, Paris

63: 245-319, 1925

*Hydatid Gas Cyst of the Lung. F. Dévé.—p. 245.
*Solid Tumors of the Appendix. L. Léorat.—p. 296.
*Luxation of the Astragalus. Weitzel.—p. 306.

Hydatid Air Cyst of the Lung.—Dévé refers to what he calls hydatid pneumocysts, that is, the cyst takes up air and the findings suggest a cavity. It differs from hydatid pneumothorax. He has collected and discusses seventy-one cases of these hydatid cysts simulating a pyoneumothorax. In thirty-one cases no operation was attempted, and only 35.4 per cent. spontaneously recovered; 64.5 per cent. proved fatal. In the thirty-seven operative cases, 64.9 per cent. recovered and only 35.1 per cent. died.

Solid Tumors of the Appendix.—Léorat remarks that cancer of the appendix is the least malignant of all cancers of the digestive tract. Recurrence has been known in only 2 per cent. of the cases. The subjects are usually young, between 20 and 35, or children or adolescents. Attacks of pains in the region, without fever, are characteristic, and the region is tender in the intervals. If a tumor is found in the appendix, the glands in the region should be carefully investigated.

Dislocation of the Astragalus.—Weitzel analyzes the findings and the indications for treatment with simple luxation of the astragalus, with or without injury of the malleoli, and also luxations with part of the astragalus torn off.

Schweizerische medizinische Wochenschrift, .Basel

55: 405-424 (May 7) 1925

*Pathology of General Paralysis. O. Binswanger.—p. 405.
*New Occurrence of Gerlier's Disease. K. Rehsteiner.—p. 410.
*Subacute Inguinal Lymphogranuloma. V. Tschirky.—p. 414.
Hemorrhages After Extirpation of Adenoids. H. Haag.—p. 417.

Pathology of General Paralysis.—Binswanger points out that necrobiotic changes in the parenchyma of the brain are found in the early stages of general paralysis. It is highly probable that the first tissues affected are the finest elements (Nissl's gray matter). This may occur even in the "neurasthenic" stage. A predisposition—perhaps hypoplasia of the vessels or permeability of the meninges—favors the invasion of the ectodermal functioning part of the brain, and thus leads to paralysis. Acquired toxic influences also play a rôle.

New Occurrence of Gerlier's Disease.—Rehsteiner has observed seven cases of the disease described by Gerlier as *vertige paralysant.* The symptoms are dizziness, ptosis and paresis of other muscles, especially of the neck. Rehsteiner also observed paralysis of convergence, and in one case a spasm of the orbicularis oculi muscle. The disease affects several members of the household, and recurs in attacks which gradually diminish in strength.

Subacute Inguinal Lymphogranuloma.—Tschirky describes a case of the benign but torpid disease which has been observed to date exclusively in men after an intercourse and an ephemeral ulcer on the penis. The patient improved remarkably after five intravenous injections of a 1 per cent. solution of tartar emetic increasing from 1 to 5 c.c. by each third day. After four more injections of 2 c.c., given within fourteen days, the cure was complete.

Policlinico, Rome

32: 659-693 (May 11) 1925

Modern Views on Rickets. R. Pollitzer.—p. 659.
Spontaneous Rupture of Spleen. E. Capecchi.—p. 665.
Apparatus for Pneumothorax. E. Severini.—p. 667.

32: 695-729 (May 18) 1925

Dold's Reaction. G. Spicca.—p. 695.
*Twenty Years After Suture of the Heart. E. Cecchini.—p. 699.
*Treatment of Pernicious Anemia. Valduga.—p. 701.
Postoperative Jejunal Ulcers. G. Baggio.—p. 703.

Two Patients Twenty Years After Suture of the Heart.—Cecchini reexamined a man who had had a stab wound of the heart sutured seventeen years before. The function was perfect. He has received a report of good health from a similar second patient.

Treatment of Pernicious Anemia by Excochleation of Bone Marrow.—Valduga removed the bone marrow of the femur in a patient who was probably suffering from pernicious anemia. The patient survived the intervention and even felt better for three months.

Brazil-Medico, Rio de Janeiro

1: 211-224 (April 25) 1925

*Modern Treatment of Epilepsy. H. Roxo.—p. 211.
*Pathologic Physiology of the Thyroid. Pimenta Bueno.—p. 213.

Modern Treatment of Epilepsy.—Roxo emphasizes that the primary cause of the epilepsy and the symptoms characterizing it are the guides for treatment. Aside from the cases resulting from destructive brain lesions in early childhood, epilepsy is generally curable, he says. Treatment of syphilis, abstention from alcohol, organotherapy in the epilepsy developing at puberty, and abstention from foods inducing a colloid upset may be indicated in different cases, or stimulation of the emunctories and regulation of liver function. He gave to one group of epileptics 0.10 gm. of luminal at night and 2 gm. of bromid during the day, with excellent results but not when the two were combined. Luminal, however, can be associated with belladonna and spartein. When this is done, the dose of luminal should not be over 0.20 gm. a day. He has noticed that those who respond most readily to the luminal with an eruption are those who require least of the drug to banish the seizures.

Pathologic Physiology of the Thyroid.—Pimenta Bueno presents arguments to prove that all the organs dependent on the same trunk artery form a solid whole in relation to the rest of the organism, although they may have an antagonistic action between themselves.

Crónica Médica, Lima

42: 33-64 (Feb.) 1925

*Nystagmus in Epidemic Encephalitis. Max. González Olaechea.—p. 33.
*Tubal Pregnancy. M. C. Aljovin.—p. 38.
Bill for Reorganization of Health Service. Committee Report.—p. 51.

42: 65-96 (March) 1925

Uterine Fibromyomatosis. Aljovín and Lozada.—p. 65.
Cancer of Uterine Cervix. E. Bello.—p. 73.
Dermatoses in Peruvian Recruits. C. A. de la Puente.—p. 80.
Malformations of External Female Genitals. V. M. Bazul.—p. 83.
Begun, p. 8.

Nystagmus in Epidemic Encephalitis.—The boy, aged 15, had been healthy until the sudden onset of fever, vomiting and general malaise. The fourth day nystagmus of the myoclonic type developed, with hyperesthesia, tremor, myalgia, and a glucose content in the spinal fluid of 0.25 per cent. On assumption of epidemic encephalitis, from 1 to 5 c.c. of a 40 per cent. solution of hexamethylenamin was given by the vein, with Lugol's iodin-iodid solution as adjuvant, and the fever and nystagmus subsided, the patient being discharged from the hospital the twelfth day.

Tubal Pregnancy.—Aljovín and Heraud state that 2.7 per cent. of the 450 gynecologic cases in recent years in the Santa Ana Hospital were instances of tubal pregnancy. Only two of the twelve women were primiparas. Removal of both tubes and the appendix formed the routine procedure, and all the patients recovered. All had a history of tardy menstruation, dysmenorrhea, or other ovarian anomaly.

Lisboa Médica

2: 57-124 (Feb.) 1925

*Diagnosis of Spinal Cord Affections. E. Moniz.—p. 57.
Ultraviolet Rays in Therapeutics. F. Formigal Luzes.—p. 106.
Rapid Diagnosis of Cancer. H. Parreira.—p. 118.

Iodized Oil in Diagnosis of Spine Cord Affections.—Egas Moniz remarks that in some of the cases he reports the diagnosis had been made with other means, and the iodized oil merely confirmed it. But this confirmation is extremely valuable in removing the last doubts and giving the surgeon confidence. In other cases this alone differentiated and located the lesion. Four cases are described in detail. In one, after removal of the lipomatous mass compressing the spinal cord, the oil test revealed that the operation had not been complete. Without this test, precious time would have been wasted waiting for the anticipated benefit from the operation to become apparent. In another case the compression was from serous meningitis. The symptoms had varied in intensity over several years. The iodized oil aggravated the symptoms, the lymphocytes increasing from 0.1 to 25.5. The operation then undertaken, however, was followed by improvement, and the iodized oil possibly cooperated in this. The fourth case was one of spinal pachymeningitis. The cavities in the cord with this are evidently caused by pressure from the hard encircling tissues. Operative measures have sometimes given encouraging results. The mode of descent of the oil is characteristic. The sensory-oil dissociation is instructive, that is, it may be useful to supplement the high injection of the oil with a low injection in the Trendelenburg position a week later. The upper limit of the arrest of the oil is often a vertebra above the site of the sensory disturbances. The meninges are altered but not enough to compress the spine.

Medicina, Mexico City

5: 257-280 (May) 1925

*The Wertheim Operation for Cancer. Martínez Parente.—p. 257.
*Treatment of Uterine Fibromas. Somonte.—p. 259.
Mexican Parasitology. Prolongo.—p. 263. Cont'n.
*Physiologic Carbohydraturia. C. Zuckermann.—p. 272.

Wertheim Operation for Uterine Cancer.—Martínez Parente remarks that the assistant must restrict his intervention to protecting against escape of loops of bowel with one gauze-wrapped hand while with the right he holds the speculum. Instead of a number of sponges, one, 10 or 12 meters long, folded in accordion fashion and fastened to the side of the patient, will be found more convenient for holding back the bowel, free from danger of overlooking a sponge, while it saves considerable time. Another means to save time is to ligate the hypogastric arteries beforehand; this renders ligation of smaller arteries unnecessary and prevents hemorrhage. It also facilitates the search from above downward, for the ureters and glands. Another important point is to have an attendant whose sole task is to hand new instruments so that none shall be used twice.

Uterine Fibromas.—Somonte declares that the roentgen rays are the preferable treatment of uterine fibromas at present, and soon will be for cancer.

Physiologic Glycosuria.—Zuckermann found in thirty-seven normal persons a range of from 0.15 to 0.93 gm. of glucose in the twenty-four hour urine. The average in the women was 0.32 and in the men, 0.45. In some the output of glucose was largest at night; in others during the day.

Revista de Medicina y Cirugia, Havana

30: 133-166 (March 10) 1925

*Prognosis of Prostatectomy. R. Mollá Rodrigo.—p. 135.
Resection of Nerve Cures Fistula of Steno's Duct. Stincer.—p. 153.
Surgical Import of Buccomental Paralysis. Castillo et al.—p. 155.

The Prognosis of Prostatectomies.—Mollá Rodrigo emphasizes that a man with prostatic obstruction is always a sick man and must be treated as such. He is convinced further that the majority of prostatectomy fatalities are due to the anesthetic. The causes of death invoked, the pneumonia, tardy syncope, uremia, anuria and intestinal paralysis, are the consequences of the action of the anesthetic on the organs involved.

30: 167-204 (March 25) 1925

Importance of Cystoscopy in Prostatic Obstruction. Ruiz.—p. 167.
*Modified Rovsing Nephropexy. E. Torroella.—p. 177.
The Meltzer-Lyon Test. R. Machin.—p. 186.
*Obliteration of Hemorrhoids. Ignacio Calvo.—p. 192.

Nephropexy.—Torroella lauds the simplicity and efficacy of his modification of the Rovsing technic, using intraspinal anesthesia, and kangaroo tendon instead of silk.

Treatment of Hemorrhoids. — Calvo's experience with twenty-two cases has confirmed the advantages of the method of obliteration of hemorrhoids by injection at the base of each of from 0.5 to 2 or even 3 c.c. of a 5 per cent. solution of urea and quinin hydrochlorid. Five or six injections at a week's interval form the extreme course. No special preoperative nor postoperative measures are needed, and he never noted any complication, the patient continuing at work throughout.

Revista Médica del Rosario

15: 1-66 (Feb.) 1925

*Hydatid Cyst of the Lung. C. Muniagurria.—p. 1.
*Tuberculin Reaction. Alvarez and Barralt.—p. 15.
Reconstruction of Lower Lip. A. Baraldi.—p. 23.
Multiple Foci in Skin of Fungoid Form of Tuberculosis. E. P. Fidanza.—p. 31.

Hydatid Cyst of the Lung.—Muniagurria comments on the rarity of echinococcosis in Uruguay. He has found only two cases in the total 1,600 records of his service, and has never encountered a case elsewhere. He describes a new case, the girl of 13 presenting a puzzling pulmonary affection explained by the successful removal of an echinococcus cyst.

The Intradermal Tuberculin Reaction in Respect to the Prognosis.—Alvarez and Barralt applied the intradermal test systematically to sixty-eight sanatorium inmates, and state that the outcome of the test did not parallel in any way the course of the tuberculosis. About 28 per cent. were clinically cured of those presenting a weak or negative reaction, and 25 per cent. of those with a strong positive reaction.

Sciencia Medica, Rio de Janeiro

3: 183-278 (March) 1925

*Radiology of Large Vessels. Manoel de Abreu.—p. 183.
Latent Jaundice. O. de Mello.—p. 245.
Case of Genitoglandular Dystrophia. A. A. Xavier.—p. 249.

Radiography of the Ascending Aorta.—De Abreu describes, with forty-two illustrations in the text and ten plates, his method of direct anterior and posterior oblique teleradiography of the ascending aorta and other organs in the chest. His interpretation of the findings was confirmed by the findings with intratracheal injection of iodized oil. He lists the diameters of the aorta at different ages, and the relations between the size of the aorta and the clinical symptoms of aortitis. He also discusses the "radiologic evolution" under the influence of different treatments, saying that with this new method we obtain unprecedented precision.

3: *279-346 (April) 1925*

Experiences with Carbon Tetrachlorid. L. Travassos.—p. 279.
Idem in the Navy Hospital. Heraldo Maciel.—p. 282.
*Hemiplegia from Snake Bite. O. de Magalhães.—p. 302.
Vegetarian Diet and Intestinal Flora. Genesio Pacheco.—p. 308.
Jaundice Index of Blood Serum. O. de Mello.—p. 316.
Proteins as Vehicle for Drugs. Custodio da Silva.—p. 318. Cont'n.
General Principles for Treatment of Ulcers. N. Botafogo Gonçalves.—p. 325.

Organic Hemiplegia from Cobra Bite.—The hemiplegia developed the third day, after a period of hemorrhagic manifestations, with hematemesis. The young man did not receive antivenin treatment until later, but is gradually improving. There was nothing to indicate syphilis in the case.

Semana Médica, Buenos Aires

1: 897-952 (April 23) 1925

Constipation from Stretching of Large Intestine. Goyena.—p. 897.
Projectiles in Inner Wall of Orbit. J. Lijó Pavía.—p. 900.
*Prophylaxis of Meteorism in Surgical Cases. M. Somalo.—p. 913.
Spontaneous Meningeal Hemorrhage. T. Fracassi.—p. 916.
Suppurating Fibromas of the Uterus. R. Rinesi.—p. 920.
Bronchopulmonary Aspergillus Mycosis. Castrillón and Borsani.—p. 924.
Gage of Derangement of Metabolism in Diabetes. D. Staffieri.—p. 927.
Surgical Treatment of Bronchial Asthma. P. L. Mirizzi.—p. 930.
Leptospiras and Leptospirilloses. W. H. Hoffmann.—p. 932.
*Secondary Stomach Disturbances. C. Losada.—p. 940.

Suppression of Intestinal Gases at Operations. — Somalo had a patient with enormous recurring eventration, the intestines extremely distended with gases. He administered charcoal freely, and this absorbed the gases so promptly and effectually that the flattened loops were easily reduced and the abdominal wall reconstructed. He completely abolished with charcoal the meteorism in twenty-seven other laparotomies. He precedes it once with castor oil, followed in three hours with the charcoal, in powder or tablet, to a total of 25 gm. a day for two days, and the morning of the operation gives a large dose with only a little water. The charcoal may be continued after the operation. The patients all came to the operation with undistended bowels.

Stomach Disturbances in Disease of Other Organs. — Losada enumerates the points which differentiate primary and secondary stomach disturbances, saying that in the majority of cases the gastropathy is not the primary disease or, if primary, it is perpetuated by disease elsewhere.

1: 953-992 (April 30) 1925

*Survival After Rupture of Heart. Rojas and Elizalde.—p. 953.
Endonasal Operation on Lacrimal Sac. J. Basavilbaso.—p. 957.
Hydrotherapy and Hematology. A. Vinaj.—p. 970.
Eugenics and Cerebral Phonendoscopy. A. Bianchi.—p. 972.
Fulminating Gangrene of Arm in Anthrax. I. Justiniano, Jr.—p. 976.
Means for Repression of Prostitution. P. Beristain.—p. 977.
Case of Hysteric Astasia-Abasia. W. López Albo.—p. 980.

Survival After Spontaneous Rupture of the Heart.—The chronic alcoholic degeneration of the heart led to rupture from a comparatively slight exertion, but the blood escaped in the form of a dissecting hematoma, the character of the clots testifying to slow and gradual extravasation and engorgement of the lungs, allowing survival of several hours. A number of similar cases on record are cited, including an Argentine case with survival of four days after a stab wound of the heart. Wounds of the heart are more promptly fatal when an auricle is involved; with gunshot wounds; and, when the extravasation occurs rapidly and the blood cannot escape from the pericardium.

Beiträge zur klinischen Chirurgie, Berlin

133: 205-366 (Feb.) 1925

Nonspecific Cold Abscesses. E. Melchior.—p. 205.
Function of Bile Duct Sphincter. O. Specht.—p. 213.
Import of Variations in Biliary Passages. Odermatt.—p. 221.
Operative Treatment of Fractures. N. v. Hedry.—p. 237.
*Back-Fire Treatment of Erysipelas. F. v. d. Hütten.—p. 252.
*Treatment of Leg Ulcers. J. Kovács.—p. 260.
*Roentgen-Ray Treatment of Prostatic Obstruction. Krabbel.—p. 266.
Multiple Invagination from Adenoma. N. Novák.—p. 271.
*Kidney Tumors. H. Roth and B. Schwoerer.—p. 277.
*Nerves of Arteries in the Extremities. Hahn and Hunczek.—p. 302.
Retroperitoneal Lymph Cysts. C. Barthels.—p. 307.
Clinical Study of Paratyphoid N. S. Ssokoloff.—p. 321.
Operative Treatment of Filariasis. O. Thieme.—p. 354.
The Functional and Mechanical Demands on Young Bone Callus. E. Wehner.—p. 365.

Treatment of Acute Erysipelas with Ethyl Chlorid Freezing. — Hütten reasoned that if the spreading erysipelas encountered a barrier of artificially induced inflammation, it might be arrested, or at least the streptococci so attenuated that the process would die out The redness, swelling and local heat after freezing with ethyl chlorid persist for about twenty-four hours, and he utilized this reaction as the barrier against the erysipelas in four cases. The results were encouraging when the freezing was carried to the point of blister production. This leaves a pigmented area afterward, so the method is not applicable to the face, but otherwise he says that his experience justifies further trials.

Treatment of Leg Ulcers.—Kovács applied the Kuzmik technic alone in twenty-one of sixty-two cases in the last ten years, and all the patients reexamined in two years were completely cured. After this, in a few certain veins enlarged in other areas or (in seven cases) in the operative area, but never enough to interfere with the earning capacity. Kuzmik passes a silk thread through the skin and around the vein and ties it over a roll of gauze. The ligature can be left for twelve days without necrosis of the skin, during which time a solid thrombus forms and the obliteration of the vessel can be confidently expected. The Klapp method of supplementary subcutaneous suture was applied in forty-one cases, with fatal pulmonary embolism in one.

Roentgen-Ray Treatment of Prostatic Obstruction.—Krabbel states that all the cases of hypertrophy of the prostate at the Aachen-Forst hospital since 1914 have been treated with roentgen rays as the routine procedure. In twenty-three of the twenty-eight cases the desired effect was promptly realized; spontaneous micturition was restored and the cystitis subsided, although the size of the prostate was not much reduced. The disturbances returned in five cases in the course of one to three years, but, in two, disappeared again on resumption of the exposures. The favorable cases were all in men over 70 and the disturbances had not been of long standing, generally beginning with acute retention

Kidney Tumors.—In 50 per cent of the thirty-eight cases of kidney tumor analyzed, hematuria, pain and a tumor were associated; cystoscopy was never instructive. Considerable hemorrhage without infection points to a cancer rather than a calculus. Aseptic calculi were never encountered

Nerves of the Vessels.—Hahn and Hunczek give colored plates showing the pasage of nerve fibers to the arteries of the limbs. Their findings confirm in the main those of Todd and Potts. The anterior tibial is peculiarly well supplied with nerve fibers, all from the external popliteal

Deutsche medizinische Wochenschrift, Berlin

51: 807-848 (May 15) 1925

Internal Secretion. L Borchardt —p 807.
*Posture Reflexes in Man H Hoff and P. Schilder —p 810
Roentgen Treatment of Benign Hemorrhages. E Vogt —p 812.
*Pathogenesis and Treatment of Coxa Vara. Stettner and Wustrow.—p 815.
*"Pseudopneumothorax" K Dehio —p 817.
*Ebstein's Theory of Calculi H Nakano —p 819. Conc'n
*Diuretic Action of Milk and Fruit Diet W Brednow.—p 821
Transmission of Hypersensitiveness to Mustard Oil E Lehner and E Rajka.—p 825.
Recovery from Landry's Paralysis E Horwitz —p 826
Familial Hypersensitiveness R. Kochmann —p 826
*Protracted Priapism. K Laemmle —p. 827.
*Accidental Strychnin Poisoning Willfuhr —p 827
Orthopedics. H Debrunner —p 829.
Secret and Proprietary Drugs Vorwahl —p 829
Teaching of Pathologic Physiology A. Bickel —p 830
Thomas Mann's "Zauberberg" from Viewpoint of Tuberculosis Specialist. Schelenz —p 831.
Etiology and Treatment of Rickets W. Rosenthal —p. 843

Posture Reflexes in Man.—Hoff and Schilder publish their observations on posture reflexes in man in various diseases. It seems that these primitive reflexes are more pronounced in conditions of apraxia.

Pathogenesis and Treatment of Coxa Vara.—Stettner and Wustrow have devised a supporting apparatus of which they give illustrations.

"Pseudopneumothorax."—Dehio observed for twenty years a patient with signs of pneumothorax Necropsy revealed the cause in an enormous subpleural sac of air communicating with the bronchus.

Ebstein's Theory of Calculi.—Nakano concludes from his observations that the organic base of urinary calculi is due to secondary adsorption of protein material on the cystallizing mass.

Diuretic Action of Milk and Fruit Diet.—Brednow confirms the diuretic action of a diet of semisolid foods with fruit.

Protracted Priapism.—Laemmle observed a case of priapism of fourteen days' duration resistant even to general anesthesia in a young man whose penis had been manipulated by a woman who refused coitus. The patient recovered after two intravenous injections of a protein preparation

Accidental Strychnin Poisoning by Drug.—Willfuhr reports the fatal strychnin poisoning of a child who had eaten a few tablets of "iron and arsenic tablets" (Merck's compretiae) left by the parents within her reach The strychnin content of this preparation is not indicated with sufficient clearness to attract attention.

Klinische Wochenschrift, Berlin

4: 953 1000 (May 14) 1925

Phototherapy. A. Eckstein —p 953
Deep Sensation of Pressure. Goldscheider.—p 959
Action of Sulphur and Sulphur Springs. E Burgi —p 961.
*Oxyuriasis J. Wilhelmi and M. Quast—p 964
*Dosage of Epinephrin. F Weinberg —p 967
*Diuresis After Thermic Stimuli O A. Rosler —p 968
*The Epinephrin Reaction. E. Kylin.—p. 969.
*Ectoscopy. E. Weisz —p 970.
*Gastric Acidity and the Pylorus T Bársony et al —p 976
Kahn's Cancer Reaction H E Büttner —p. 977
Influence of Serum on Tuberculin Reaction. A V. v Frisch —p 977
*Dialysis of Solutions of Arsphenamin Schreus and Wieler.—p 977
*Endocrine Disturbances in Dermatoses H. Hoffmann —p 978
Microscopy of Living Eye A Meesmann —p 978
Møllgaard's "Chemotherapy of Tuberculosis." W. Heubner —p 983
Health Statistics Freudenberg.—p 999.

Oxyuriasis.—Wilhelmi and Quast had better results with the "finger nail" test than with examination of the rectum They wipe all the dirt from the nails with small pieces of cotton soaked in 0 5-1 per cent. sodium hydroxid and held by a forceps; then shake the cotton in the sodium hydroxid solution and centrifugate the latter. Ova of oxyuris were also frequently present in the nose.

Dosage of Epinephrin.—Weinberg found that addition of 0.0001 c c. of a 0.1 per cent. solution of epinephrin per kilogram of body weight and minute to a continuous intravenous infusion raises moderately the blood pressure in healthy subjects. The dose necessary in dogs is about five times higher.

Diuresis After Thermic Stimuli.—Rosler found in men delayed diuresis after a cold hand-bath and accelerated diuresis after a hot one. This confirms Wertheimer's observation on animals The vasoconstriction of the kidneys lasted in the latter's experiments longer than the stimulus. The after-effects were also marked in Rosler's observations

The Epinephrin Reaction.—Kylin found that an intravenous injection of 0.1 gm. of potassium chlorid strengthens the negative phase of the epinephrin reaction.

Ectoscopy.—Weisz describes and illustrates his method of inspection He observed that the intercostal furrows do not reach everywhere to the costal arch. The smooth islands indicate the position of the spleen and liver, which is of value in exploratory and therapeutic punctures of the pleura The lower border of the lungs may be easily determined by observation of the respiratory movements in rapid shallow breathing, in phonation of short sounds (as in "kitt") and especially during the patient's sniffing movements. The phonation movements of the abdominal wall are absent over acutely diseased areas (inflammation, perforation of ulcer) The phonation bulging of the intercostal spaces is present with exudates. Therefore ectoscopy is the only physical method which reveals the border between an exudate and the liver Traces of phonation movements in an area of dulness indicate an encysted exudate among fibrous adhesions. He emphasizes the necessity to make long intervals between pronouncing the word "kitt" He refers for other details—especially the observations on paralyzed muscles—to his book.

Gastric Acidity and the Pylorus.—Bársony, Bokor and Friedrich found that the pylorus, in the same individual is equally wide during hypacid and hyperacid phases of digestion.

Dialysis of Arsphenamins.—Schreus and Wieler found that various arsphenamin compounds dissolved in serum dialyze less rapidly than when dissolved in salt solution. Nevertheless the difference is not great enough to disprove the disappearance of arsphenamin from the blood by simple diffusion into the tissues.

Endocrine Disturbances in Dermatoses.—Hoffmann found in all his eighteen cases of sclerodermia indications of low tonus of the sympathetic and high tonus of the parasympathetic. The epinephrin response was low (no tremor, slight increase in blood pressure and frequency of the pulse); no hyperglycemia after epinephrin, little alimentary glycemia.

Medizinische Klinik, Berlin

21: 723-760 (May 15) 1925

*Treatment of Inflammations of the Adnexa. O. von Franqué.—p. 723.
Tuberculosis of the Larynx. R. Imhofer.—p. 727.
*Percussion in Brain Tumors. A. Slauck.—p. 732.
*Treatment of Multiple Sclerosis. S. Fischer.—p. 733.
*Pneumothorax Treatment in Grave Diabetes. M. Rosenberg.—p. 733.
Faults of Injection Needles. Steinheil.—p. 734.
Diabetes Insipidus and Syphilis. F. Seligsohn.—p. 734.
Rupture of Diaphragm from Contusion. A. Hedri.—p. 736.
Asthmatic Personality. H. Peiser.—p. 738. Cont'd.
*Organotherapy and Irradiation in Gynecology. Landeker.—p. 740.
Blood Examination for Malaria. Weiss.—p. 743.
*Uterine Mucosa in a Laparotomy Scar. H. Mark.—p. 744.
Action of Ultraviolet Rays on Food. K. Brandenburg.—p. 746.
Present Treatment of Cardiovascular Disease. Edens.—p. 747.
History of Knife Swallowers. F. Pick.—p. 758.

Treatment of Inflammations of the Adnexa.—Franqué discusses prevention in particular. Energetic bimanual palpation and sudden movements during menstruation may carry infectious material into the tubes. Sexual intercourse in the last days before labor causes many fatal infections. It should be omitted in the second half of pregnancy. The treatment of adnexal inflammations consists in an icebag first. After defervescence, daily lavages with 6-10 quarts of hot water and warm dressings should be used for six weeks. Later on, baths are advisable.

Percussion on Brain Tumors.—Slauck confirms the usefulness of direct percussion for localization of superficial tumors of the brain. A stethoscope held in the sagittal suture transmits delicate differences of the sound.

Treatment of Multiple Sclerosis.—Fischer had favorable results in fourteen cases of multiple sclerosis with Credé's ointment, as recommended by Oppenheim. He massages into the skin 2 gm. of the ointment (until it dries) daily for five days; a bath is given on the sixth and rest on the seventh day. He repeats the course four or five times. After four weeks of rest, the same treatment is repeated, using only 1 gm. daily. Then another course after another month—at least for one year.

Pneumothorax Treatment in Grave Diabetes.—Rosenberg's patient with a mild diabetes changed into a grave precoma condition, probably by an exacerbation of her tuberculosis. Artificial pneumothorax had a favorable influence on both conditions. This also shows that tuberculosis does not always increase the sugar tolerance in diabetes.

Combined Organotherapy and Irradiation in Gynecology.—Landeker reports good results with his combination of injections of extracts from uterus, placenta and anterior pituitary with vaginal irradiation with ultraviolet rays in hypoplasia.

Uterine Mucosa in a Laparotomy Scar.—Mark observed a cavernous tumor containing uterine mucosa in the laparotomy scar in a woman. She had been operated on eleven years before for appendicitis. The tumor secreted a bloody fluid during menstruation.

Monatsschrift für Geb. und Gynäkologie, Berlin

69: 277-410 (June) 1925

Physicochemical Aim in Gynecology and Obstetrics. L. Seitz.—p. 281.
Improved Abderhalden Blood Test. H. Sellbeim.—p. 283.
*True Menstruation After Beginning of Pregnancy? H. Wintz.—p. 303.
Brain Pressure and Fetal Heart Sounds During Delivery. Esch.—p. 308.
*Evacuation of the Uterus in Abortion. O. v. Franqué.—p. 320.
Value of Tests for Syphilis in Obstetrics. E. Martin.—p. 324.
*Retention of Placenta Fragments. G. A. Wagner.—p. 327.
*Retention of Placenta Fragment Calls for Its Immediate Removal. O. Pankow.—p. 341.
Gwathmey's Method for Painless Childbirth. A. Stein.—p. 344.
*Sacral Anesthesia. H. Eymer.—p. 347.
Kielland Forceps and Cesarean Section. L. Fraenkel.—p. 356.
*Hydatidiform Mole. E. Essen-Möller.—p. 360.
Individual Treatment of Myoma. M. Henkel.—p. 364.
Corpus Luteum Cysts or Cystic Corpora Lutea? R. Schröder.—p. 380.
*Psychotherapy in Gynecology. R. T. von Jaschke.—p. 388.
*Profuse Bloodletting in Eclampsia. H. Schlossmann.—p. 391.
*Stimulation Therapy by Roentgen Irradiation. W. S. Flatau.—p. 401.

True Menstruation After Beginning Pregnancy?—Wintz describes two cases of beginning pregnancy with true menstruation, observed clinically, fourteen and seventeen days after coitus, and pregnancy definitely established later, without intervening coitus. His third case was in a secundipara, treated for ovarian tumor, with history of menses twice after the beginning of the first pregnancy, once in the second. While the uterus suggested pregnancy at the third month, regular menstruation had occurred twice. Laparotomy revealed the corpus luteum of pregnancy in the left ovary, and a second, smaller corpus luteum in the right ovary. Extirpation of this ovary and the parovarian cyst did not interrupt the pregnancy. The smaller corpus luteum thus played no part in the pregnancy, as removal of the corpus luteum of pregnancy early in pregnancy always induces abortion.

Technic for Emptying Uterus in Abortion.—Franqué holds that before evacuation of the uterus the canal must be dilated to at least a finger's breadth. Anesthesia and palpation of the uterus are recommended in any case. Instrumental emptying of the uterus is admissible only up to the ninth week, and with a broad blunt curet. Later than this, exclusively digital examination should be made, with separation of the adherent placenta by the finger. Only parts already loosened, and visible and palpable in the internal os, may be removed by the forceps. After the third month he considers expulsion of the fetus best left to Nature, at least postponed until sufficient dilatation of the os readily allows extraction. Till then, packing with iodoform gauze is advised, or, in the later months, the insertion of a small metreurynter, if, with large fetus, the hemorrhage cannot be arrested with the trunk of the fetus by traction on the legs.

Prophylaxis and Treatment of Retained Placenta Fragment After Delivery at Term.—Wagner believes that the Mojon-Gabastou method is destined to replace not only manual separation of the placenta but also the Credé method of placental expression. The negative outcome of Küster's milk test (injection of milk into the umbilical vein) is a sure sign that there is no defect in the palcenta. After the tentative diagnosis of a defect in 237 cases, the milk test eliminated 187 as only seemingly incomplete; a defect in the placenta was found in forty-two of the remaining fifty-four cases. The slightest suspicion of a missing placenta scrap, at least as large as a filbert, is a definite indication for palpation of the uterus (Zangemeister). With no signs of infection but sudden gushes of blood, he does not consider removal of the placenta fragment a grave risk. In cases with fever on admission, removal of the placental scrap always caused an aggravation (death in three cases). The introduction of a solution of 1 part of pepsin, 5 parts of concentrated hydrochloric acid, and 1,000 parts of distilled water for the digestion and disappearance of the placenta remnant resulted in recovery in six of nine cases admitted with grave infection.

Arrest of Placenta and Palpation.—Pankow urges the avoidance of all manipulations of the uterus in the third stage of labor in order not to disturb the normal mechanism of detachment of the placenta, and increase the possibility of retention of fragments. He advises immediate palpation of the uterus even if only a small placenta scrap is retained, and its removal.

Sacral Anesthesia.—Eymer cautions against pressure on injection. Overdosages of procain in "sacral lumbar anesthesia" are avoidable.

Prognosis and Treatment of Hydatidiform Mole.—Malignant degeneration occurred in 16 per cent. of Essen-Möller's fifty cases. The age of the patient appears to be a factor. The malignancy was more than double in the patients above 45 years. He asks to what extent routine hysterectomy in moles in women over 45 is justifiable in prevention of malignant degeneration.

Psychotherapy in Gynecology.—Jaschke believes the difference in material may explain the differences in the frequency of mental symptoms as observed by various writers. He notes the greater prevalence in the large cities. He points to modern literature, based largely on psychosexual conflicts, as a factor. While gynecologists who are enthusiasts for psychotherapy point to the unfavorable end-results of operative intervention, these results, he says, are largely due to mistaken indications. He remarks that the end-results after psychotherapy are often poor and that psychotherapy, wrongly practiced, may be harmful. Freud's method, he believes, belongs only to the psychiatrist and not to the gynecologist.

Effect of Profuse Bloodletting in Eclampsia.—Schlossmann considers the effect primarily a removal of poisons. Reflex processes and reduction of the viscosity of the blood play a minor rôle. The decrease in blood pressure is a measure of the effect. Decrease in tension after bloodletting is more favorable than after the administration of drugs. The aim is removal of the poisons by the reflux of tissue fluids into the blood stream, hence the largest possible bloodletting is recommended. As long as the blood pressure remains high, great losses of blood are not dangerous in eclampsia.

Stimulation Therapy by Roentgen Irradiation.—Flatau irradiates only once in hypofunction from infantile development, as he is convinced that favorable results are obtained by a small dose. He has treated with roentgen stimulation doses twenty-one cases of female sterility from some hypoplastic or asthenic anomaly of the ovarian function, with pregnancy to date in twelve of these, in eight instances carried to term, with healthy child. Rigorous adherents of eugenics must be opposed to treatment for sterility, as it is usually from organic insufficiency based on some constitutional anomaly. Flatau emphasizes that the true physician's foremost duty is to help his patient in his present distress, not to consider the viewpoint of eugenics. Polymenorrhea in girls and young women without heart weakness and hemorrhagic diathesis seems an indication for irradiation of the spleen. He agrees with Sippel that the intensity of menstruation depends partly on a quantitatively or qualitatively affected internal secretion of the ovary.

Münchener medizinische Wochenschrift, Munich

72: 793-840 (May 15) 1925

*Curability of Tuberculous Meningitis. K. Koch.—p. 793.
*Scrofula and Affections of Teeth. H. J. Tholuck.—p. 794.
Tuberculosis of Old Age. R. Taubert.—p. 798.
Qualitative Diagnosis and Treatment in Extrathoracic Tuberculosis. H. Fechter.—p. 799.
Roentgen Treatment of Pulmonary Tuberculosis. F. Röver.—p. 801.
*Surface Treatment with Very Soft Roentgen Rays. Bucky.—p. 802.
Histology of Effects of Very Soft Rays. Buschke and Sklarz.—p. 806.
*Treatment of Pruritus Vulvae. W. Arnoldi and K. Warnekros.—p. 807.
Lobelin in Surgical Paralysis of Breathing. K. Hempel.—p. 808.
*Treatment of Streptococcus Infections. Eytel.—p. 810.
*Fatal Poisoning with Oil of Chenopodium. C. Braun.—p. 810.
*Regeneration of *Hair Pigment*. W. Barfurth.—p. 811.
"Metal Chambers for Blood Counts." W. Roerdansz.—p. 812.
"Ponndorf Vaccination." Burchard.—p. 812.
Rheumatic Foot Disturbances. H. Malten.—p. 813.
Treatment of Fractures. F. Lange.—p. 814.
Tuberculin Tests in Schools. Klein and Worringen.—p. 816.
The Proposed Bill for *Protection* of Mothers. Klotz.—p. 817.
Associations of Clinic Assistants. M. A. Busch.—p. 818.
Taxation of the Liberal Professions. R. Wassermann.—p. 819.

Curability of Tuberculous Meningitis.—Koch's patient was a 9 year old boy who had had two years before a tuberculous spondylitis. Three weeks after falling from a chair and hurting his back he developed all the symptoms of tuberculous meningitis (including the presence of bacilli) but he recovered completely.

Scrofula and Affections of Teeth.—Tholuck observed a lowering of the incidence of enlarged glands in school children after their teeth were taken care of.

Surface Treatment with Very Soft Roentgen Rays.—Bucky found that only one eighth of the radiant energy necessary to produce an erythema with hard unfiltered rays is needed when using extremely soft rays. This suggests that the apparatus for superficial treatment used so far is unnecessarily large and expensive.

Treatment of Pruritus Vulvae.—Arnoldi and Warnekros found that an antidiabetic diet (Petrén or Falta) cured or alleviated the itching not only in diabetic but also in nondiabetic women within five to eight days.

Treatment of Streptococcus Infections.—Eytel had good results in various streptococcus infections when using the prescription recommended by Unna in erysipelas. He uses: ammonium carbonate, 5 gm.; anisated spirit of ammonia, 5 c.c.; syrup, 20 c.c.; water to make 200 c.c. One tablespoonful every hour or every two hours.

Fatal Poisoning with Oil of Chenopodium.—Braun reports on the death of a child, 22 months old, after ingestion of 12 drops of oil of chenopodium.

Regeneration of Hair Pigment.—Barfurth had a grave furuncle of the temporal region. The hair which grew there later had a dark pigment although the surrounding hair is gray and the rest of the head a dark blond.

Wiener klinische Wochenschrift, Vienna

38: 525-548 (May 14) 1925

*Hypertrophy of the Prostate. T. Hryntschak.—p. 525.
*Diagnosis of Infiltrations of the Lungs. Czyhlarz and Pick.—p. 529.
*Early Diagnosis of Pregnancy. P. Werner.—p. 530.
Epiploitis. W. Goldschmidt.—p. 530.
*Glucose Injections in Varicose Veins. Remenovsky and Kantor.—p. 532.
Polyneuritis and Tabes. H. Spitzer.—p. 535.
"Ileus Serum." L. Schönbauer.—p. 537.
Treatment of Extrasystoles. M. Herz.—p. 538.
Course and Treatment of Tuberculous Peritonitis. C. Reitter. Supplement.—pp. 1-16.

Errors in Diagnosis and Treatment of Hypertrophy of the Prostate.—Hryntschak prefers the term adenoma of the prostate. It changes into a cancer in 10-20 per cent. of the patients, but—because of its sequelae—can be considered clinically malignant in every case. He prefers the French bimanual method of palpation—the patient on his back with flexed knees and hip joints. The physician's hand over the symphysis presses the enlarged gland toward the finger in the rectum. Tenderness and nodules arouse suspicion of cancer. The chronic retention should not be evacuated at once. Gradually increasing amounts should be removed for ten days. He considers the diagnosis itself as indication for surgical treatment.

Diagnosis of Infiltrations of the Lungs.—Czyhlarz and Pick examined the puncture fluid. Lobar pneumonia gives leukocytes; cheesy pneumonia, epitheloid cells. An infarction fluid contains chiefly erythrocytes.

Early Diagnosis of Pregnancy.—Werner made repeatedly the diagnosis of perimetritis in women complaining of pains in the abdomen around the time of the expected menstruation. The uterus was quite tender. The disturbance was due to beginning pregnancy.

Glucose Injections in Varicose Veins.—Remenovsky and Kantor inject 5 c.c. of a 50 per cent. solution of glucose into the varicose vein after expression of the blood, and compression of the vein above and below the point of injection.

38: 549-576 (May 21) 1925

Histologic Findings in Gout. A. M. Brogsitter.—p. 549.
*Thermocautery in Minor Surgery. F. Starlinger.—p. 552.
Phlegmon of Duodenum. H. Schneider.—p. 556.
*The Sensation of Thirst. F. Brunn.—p. 558.
*Pathogenic Mites in Vienna. K. Toldt, Jr.—p. 559.
*Roentgen Treatment of Arthritis Deformans. K. Staunig.—p. 561.
Partial Water Bed. P. Beck.—p. 561.
Vomiting by Infants. A. F. Hecht.—p. 563.
Endocrine Diseases and the Digestive Apparatus. F. Pineles. Supplement.—pp. 1-15.

Thermocautery in Minor Surgery.—Starlinger recommends the thermocautery in furuncles. It is painless, leaves a small scar, and requires no drainage; a moist dressing is sufficient. He also used it successfully in mastitis.

The Sensation of Thirst.—Brunn is opposed to the current opinion that thirst is due to an irritation of the hypothalamic center by an increase in the crystalloids of the blood. He observed an increase of 0.08 per cent. of sodium chlorid in the blood without thirst after drinking salt solutions. In prolonged experiments, the sodium chlorid concentration of the blood and cerebrospinal fluid was 80 per cent. higher than at the beginning, and yet the water intake did not rise. Leschke's observation on thirst after sudden injections of hypertonic solutions is only an exception; Brunn never saw it, yet he admits that the injections may not be sufficient to cause an increase of the blood chlorids amounting to 0.05-0.1 per cent. Diarrhea and sweating produce thirst by withdrawing the fluid from the tissues. He sees an important part of the problem in the shifting of fluid from the tissues into the blood. Not all the tissues are equally important in producing the thirst. The mucous membranes of the mouth and esophagus play the main rôle. The nerves report to the vegetative center for thirst that there is a stream of fluid to the blood from the tissues and perhaps from the reticulo-endothelial system.

Pathogenic Mites in Vienna.—Toldt found in Mödling foci of *Leptus autumnalis* Shaw which cause on the next day itching papules persisting for eight days. The disease is practically identical with the thrombidiasis he found in the Tyrol.

Roentgen Treatment of Arthritis Deformans.—Staunig had good results with irradiation in arthritis deformans.

Zeitschrift für urologische Chirurgie, Berlin

17: 251-381 (May 4) 1925

*Decapsulation and Denervation of Kidney. Keller and Rost.—p. 251.
Cystic Degeneration of Kidneys. J. G. Gottlieb.—p. 256.
Unusual Urethra Deformity and Perineal Phlegmons. E. Brack.—p. 272.
*Tumors of the Bladder. F. Fuchs.—p. 277.
*To Induce Atony of the Ureter. R. Andler.—p. 298.

Decapsulation and Denervation of the Kidney in Toxic Conditions.—Keller and Rost repeated and amplified V. Hoffmann's experiments on kidney decapsulation and denervation in animals, but were unable to confirm his favorable results in toxic states.

Tumors of the Bladder.—Fuchs treats these tumors by electrocoagulation, patients with pedunculated papillomas as outpatients, those with broad-based papillomas and cancer under clinical control. When in the cancer cases necrosis of the surface has removed the danger of inoculation of the material, extirpation by high section follows, if the condition is good.

Atony of the Ureter with Dilatation and Hydronephrosis.—Andler distinguishes between atony with and without a functionally capable ureter mouth. Experiments on animals revealed that severing all the nerves leading to the kidney pelvis and ureter causes atony and dilatation with disturbance in the output of urine. Hence not only isolating the accessible part of the kidney pelvis and entire ureter, but also denervation of the kidney pedicle is necessary to cause atony and dilatation of the kidney pelvis and ureter. During section of the nerve fibers, contractions increasing regularly in number and intensity were noted. In dogs and rabbits the peristalsis of the kidney pelvis and ureter is controlled by higher nerve centers, but automatic contractions are also possible. He recommends Läwen's paravertebral or Kappis' splanchnic anesthesia for removal of a calculus impacted in the ureter.

Zentralblatt für Chirurgie, Leipzig

52: 1073-1120 (May 16) 1925

*Division of Pylorus Muscle in Spastic Conditions. Butzengeiger.—p. 1074.
*Diagnosis of Chronic Appendicitis. B. Przewalsky.—p. 1078.
*Local Anesthesia. G. Joachimoglu and J. Zeltner.—p. 1079.
*Suprarenals in Spontaneous Gangrene. Dmitrijew.—p. 1081.
Suprarenal Transplantation in Addison's Disease. Dmitrijew.—p. 1082.

Extramucous Division of Pyloric Muscle in Spastic Conditions.—Butzengeiger recommends further application and test of Payr's procedure, especially in chronic spastic conditions of the stomach with symptoms of ulcer, on failure of conservative treatment. The results in his fifteen cases were surprisingly good at the time and later.

Diagnosis of Chronic Appendicitis.—Przewalsky observed a valuable sign in many young persons in the flat swelling, above Poupart's ligament, of lymph glands and cellular tissue around the right circumflex iliac artery. The right iliac muscle, laterally from the external iliac artery, was always somewhat flatter than the left, from atrophy due to the inflammatory processes in the crural nerve branches. This atrophy impairs functioning. Healthy persons, he says, can hold up the outstretched leg for about two minutes. In cases with the swelling and atrophy, the time the extended right leg can be thus sustained is less by fifteen seconds or more than with the left leg. As the subject reclines, the heel of the outstretched leg lies in the physician's hand, a few inches above the level of the bed or table. He begins to count the seconds the moment he removes his hand.

Ortho-Oxybenzylalcohol for Local Anesthesia.—Joachimoglu and Zeltner's figures indicate that ortho-oxybenzylalcohol is about twenty times less poisonous than cocain and eight times less than procain.

Rôle of Suprarenals in Origin of Spontaneous Gangrene.—Oppel considers hyperfunction of the suprarenals as the cause of spontaneous gangrene. Dmitrijew says that in many cases the reverse seems to be the rule—suprarenal hypofunction; an increase in the vasocontricting substance in the blood was noted six weeks after suprarenalectomy (Duchinowa). He describes one of his three cases of spastic gangrene with good results following the graft of a suprarenal taken from a dog.

52: 1121-1168 (May 23) 1925

*Artificial Respiration. O. Roth.—p. 1122.
Terminology for Aneurysms. S. Rubaschow.—p. 1126.
*Local Anesthesia with Potassium Bromid. Dmitrijew.—p. 1128.
Modified Babcock Operation for Varicose Veins. M. Schapiro.—p. 1128.
Steinach's Operation and Testicle Transplantation. Dmitrijew.—p. 1130
"Periarterial Sympathectomy in Epilepsy." H. Flörcken.—p. 1131.

Effect of Artificial Respiration.—Roth says that no method is capable of restoring the circulation of the blood. The chief effect of artificial respiration is always the reflex action on the respiration center and the heart.

Local Anesthesia by Injection of Potassium Bromid.—Dmitrijew reports forty-five operations done under local anesthesia from injection of a 1 per cent. solution of potassium bromid. The list includes two gastro-enterostomies and two lip cancer operations.

Zentralblatt für Gynäkologie, Leipzig

49: 1057-1120 (May 16) 1925

The Defective Training of Physicians in Obstetrics. Engelmann.—p. 1058.
The Blood Picture and Sedimentation in Gynecology and Obstetrics. M. Würzburger.—p. 1061.
Disinfection with Chloramine. G. Frommolt.—p. 1075.
*Painless Delivery by Synergistic Method. Lõrincz.—p. 1081.
*When Does Pregnancy Begin? W. Reni.—p. 1084.
Antefixation of Retroflexed Uterus by Laparotomy. Penkert.—p. 1086.
Foreign Bodies in Abdominal Cavity After Attempted Abortion. W. J. Zempléni.—p. 1093.

Painless Childbirth by Synergistic Method.—Lorincz used Gwathmey's method in fifty cases, with excellent results. After the rectal injection, delivery, he says, must be ended within four to five hours, because of the short duration of the effect. In general, the injection may be given in multiparas with the os dilated to 4 cm., without regard to the head or to the bag of waters. In primiparas it is deferred until there is greater dilatation and the head at its greatest circumference has passed the pelvic inlet. In some women unconsciousness is so deep that straining, the most important force in the expulsion period, is suspended. He employed the method only in cases with no anticipated labor complications, withholding it if even a slight complication seemed probable. In one complication, however, he definitely recommends the synergistic method, namely, in eclampsia.

When Does Pregnancy Begin?—On the basis of his observations in Chinese, Japanese, and European women, Reni concludes that pregnancy begins in the course of one to three days after the fertilizing coitus, and that the ovum of the last menstruation is fertilized.

49: 1121-1168 (May 23) 1925

Transposed Sigmoid Flexure as Substitute for Contracted Bladder. P. Strassmann.—p. 1122.
*Vicarious Menstruation. F. Lõnne.—p. 1129.
Intraperitoneal Removal of Ureter Calculus. R. Tateyama.—p. 1134.
*Outlook for Fetus with Pyelitis in Mother. H. Naujoks.—p. 1136.
*Kidney Function During Pregnancy. A. W. Chochloff.—p. 1139.

Vicarious Menstruation.—Lönne reports an unusual case of regular hemorrhage from the bladder and left ureter, corresponding to the menstrual period, in a woman, aged 26, with absence of menstrual discharge from the uterus. Bilateral roentgen castration after the failure of psychotherapy and organotherapy arrested the hemorrhage.

Outlook for Fetus with Pyelitis in Mother.—Naujoks says that pyelitis in the mother is a grave menace to the fetus and that in such cases many pregnancies terminate prematurely. Treatment by diet and administration of drugs should be undertaken as early as possible; in most cases disappearance of the grave symptoms or complete recovery follows. On failure of conservative measures, more drastic treatment is indicated. Induced abortion is the last resort in treatment of inflammation of the kidney pelvis. He believes that even in a large practice this should be necessary hardly once in a decade. Kidney operations during pregnancy should be considered only if the induced abortion proves ineffectual.

Kidney Function During Pregnancy.—The polyuric character of the diuresis in the last months of pregnancy, with relatively normal fluctuations in the specific gravity of the urine, seems to Chochloff to be dependent on a hyperexcitability of the water-excreting apparatus of the kidneys. The concentrating ability of the kidneys is not affected. Elimination of foreign substances (uranin) from the organism takes place somewhat more rapidly during pregnancy.

Zentralblatt für innere Medizin, Leipzig

46: 465-480 (May 16) 1925

*Blocking the Splanchnic Nerve to Arrest Renal Spasm. H. Havlicek.—p. 465.

Blocking the Splanchnic Nerve to Arrest Vascular Spasm in the Kidney.—Havlicek observed recovery in anuria of two children with scarlet fever nephritis and also in anuria in the course of eclampsia after anesthesia of the splanchnic nerve had been induced. The injection, which had been recommended by Neuwirth in reflex anuria, apparently breaks up the spasm of the afferent arteries of the glomeruli, which constitutes—according to Volhard—the most important phenomenon in acute nephritis. Palpation of the kidney helped in another patient. He suggests also an intravenous injection of papaverin.

Časopis lékařů českých, Prague

64: 721-804 (May 9) 1925. Hlava Memorial Number

*Cancer and Changes of Reactivity of Tissues. R. Kimla.—p. 721.
*Experimental Tuberculosis in Clinical Diagnosis. I. Honl.—p. 723.
*Cancer. V. Neumann.—p. 725.
*Etiology of Lymphogranulomatosis. J. Lukeš and V. Jelinek.—p. 728.
*Acute Arteriosclerotic Chorea. Z. Mysliveček.—p. 732.
Reconstruction of Common Bile Duct. R. Jedlička.—p. 735.
Primary Infection and Reinfection in Tuberculosis. J. Jedlička.—p. 741.
*Hexamethylenamin in Preparation of Vaccines. V. Renč.—p. 755.
Modification of Buchholz' Method. V. Renč.—p. 756.
Rhabdomyoma of the Heart. H. Šikl.—p. 757.
*Heterotopic Bone Marrow in the Suprarenals. V. Jedlička.—p. 762.
Amebic Abscess of the Liver. M. Zimová.—p. 768.
Carcinoids of Appendix and Small Intestine. J. C. Ortynský.—p. 775.
Teratogenic Chorio-Epithelioma in a Man. J. Jerman.—p. 783.
Congenital Goiter. J. Roubal.—p. 795.

Cancer and Changes of Reactivity of Tissues.—Kimla produced benign papillomatosis on the ears of a rabbit with tar. Thirteen months after interruption of the procedure he began with a new application of tar near the tail of the animal. After two months a sudden hyperemia of the ear appeared, together with development of squamous epitheliomas—even after the new treatment had been discontinued. He believes that cancer may be a reaction to a chronic repeated action of a stimulus—analogous to the different reaction to tuberculosis in an organism rendered allergic.

Experimental Tuberculosis in Clinical Diagnosis.—Honl inoculated the testes of guinea-pigs with the material. The infection was extremely acute in middle sized animals, 40 per cent. of them dying within ten to fifteen days, and a small number after thirty days. Punctures or the tuberculin test may speed up the diagnosis in the latter cases, retarded by the low virulence of the tubercle bacilli. The method is easier and the results are obtained earlier than with any other inoculation test. It is also suitable for obtaining pure cultures.

Cancer.—Neumann demonstrates by statistics of deaths and the percentage of clinically overlooked cancer in his necropsy material that almost one third of people, who reach 30 years of age, die from cancer. He was unable to produce tar cancer in guinea-pigs or rats in spite of various additional procedures. Strong light had apparently no influence on the production of tar cancer in mice. The latter is neither contagious nor inherited.

Etiology of Lymphogranulomatosis.—Lukeš and Jelinek confirm the presence of Much's granules in three out of their six cases of lymphogranulomatosis. Yet they found them also in lymph glands in three out of eleven controls who had neither Hodgkin's disease nor tuberculosis.

Acute Arteriosclerotic Chorea.—Mysliveček reports the clinical and anatomical findings in an elderly woman who died twelve days after the onset of choreatic movements. Only chronic arteriosclerosis of the brain was found. The sudden onset of the chorea might have been provoked by recent hemorrhagic foci in the right occipital lobe.

Hexamethylenamin in Preparation of Vaccines.—Renč prefers a 5 per cent. solution of hexamethylenamin for preservation of autogenous vaccines. He recommends to make the second injection after four to eight days to avoid injecting a superfluous amount of antigen.

Heterotopic Bone Marrow in the Suprarenals.—Jedlička describes two cases of tumors consisting of heterotopic bone marrow tissue in the suprarenal glands.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 2309-2404 (May 23) 1925

*Astereognosis. H. C. Rümke.—p. 2310.
*Sea Climate in Pulmonary Tuberculosis. C. M. Mol.—p. 2320.
*Vaccine Treatment in Whooping Cough. J. M. Wiggelendam.—p. 2326.
*Convalescents' Serum in Measles. J. C. Schippers.—p. 2328.
Early Differentiation of Angioma of Choroid. Houwer.—p. 2330.
*Tuberculosis of the Stomach. W. F. Suermondt.—p. 2335.
Typhoid with Negative Bacteriologic Findings. Pluim.—p. 2341.
Impressions of a Health Officer in the United States. Walch.—p. 2357.

Astereognosis.—The case described by Rümke sustains the assumption that astereognosis is an independent disturbance. It may be induced by a focus in the midbrain.

Influence of Sea Climate on Pulmonary Tuberculosis.—Mol's experience and impressions are that the fever and tendency to hemoptysis are favorably influenced by the seashore climate.

Vaccine Treatment of Whooping Cough.—Wiggelendam advocates vaccine therapy as soon as the disease is diagnosed, in young or old. His experience in thirty-four cases shows that we apparently can count on good results in 90 per cent. of the cases.

Convalescents' Serum in Measles.—Schippers arrested an impending epidemic of measles in a children's hospital with preventive injections of convalescents' serum.

Tuberculosis of the Stomach.—Suermondt found after resection of a gastric ulcer that it was an exclusively tuberculous process, with connected cheesy glands. No other manifestations of tuberculosis were discovered elsewhere but roentgenoscopy revealed traces of an apparently healed small tuberculous focus in the right lung.

Acta Path. et Microbiol. Scandinavica, Copenhagen

1: 353-447, 1924

Bactericides. III. F. Wulff.—p. 353.
Experimental Therapeutics with Salts of Metals. L. E. Walbum.—p. 378.
Primary Pulmonary Cancer in Tarred Rats. P. Möller.—p. 412
*Cause of Sarcoma. F. Harbitz.—p. 438.

Chronic and Acute Inflammations as Cause of Sarcoma.—Harbitz' case of chronic osteomyelitis in a man, aged 71, he says, shows the direct development of neoplastic granulation tissue rich in cells into a spindle-celled sarcoma. He also describes a case, in a boy, aged 13, of sarcoma of the tibia, preceded by an acute suppurative osteomyelitis after trauma. Since the roentgenograms four months after the appearance of the osteomyelitis and also the operation revealed only necrotic bone tissue, he concludes that the osteomyelitis antedated the tumor. He is inclined to accept a causal relation between them.

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TUBERCULOSIS OF THE VAGINA[*]

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Tubeculosis of the vagina is one of the rarest of all genecologic diseases. This extremely unusual condition is generally considered to be merely a subordinate lesion, almost invariably secondary to grave tuberculous disease of the uterus or fallopian tubes. This opinion dates back to the time of Klebs (1876) and prevails today in spite of the teaching of Williams,[1] Springer,[2] Schlimpert[3] and Norris.[4] If this view were correct, tuberculosis of the vagina would be entirely devoid of any clinical interest and unworthy of special study.

My own clinical experience with this condition, although extremely limited, has been sufficiently interesting to impel me to make an independent investigation of the subject. A careful study of authentic cases in which complete examinations have been performed shows that tuberculosis of the vagina is not always secondary to tuberculosis of the uterus or fallopian tubes, but that, on the contrary, it is frequently the only tuberculous lesion in the reproductive organs, and that in some instances it is the only active focus in the body and may be distinctly amenable to surgical treatment. In the light of these facts, the condition immediately acquires a clinical interest and significance not generally recognized.

The literature dealing with this subject is as meager as the condition is rare. Almost invariably it has been considered only in special monographs which have dealt chiefly with other far more serious and important manifestations of the disease, and for that reason, its presentation has been abbreviated. It therefore seemed worth while to record the results of this study.

This summary is based on a group of thirty-nine authentic cases of tuberculosis of the vagina. One of these, presented in detail at the end of the paper, is from my own practice; another is from the wards of the Johns Hopkins Hospital; the remaining thirty-seven are collected from the literature. The summary does not include all the cases that have been recorded; such a collection would yield a series of probably seventy-five cases. Many of these it has seemed wiser to omit, for in some instances the original articles, published fifty or seventy-five years ago, are unavailable; in others the records are extremely fragmentary and incomplete, and in many of these cases there seems to be no pathologic evidence to support the clinical diagnosis. In this study, I have included only cases in which the clinical diagnosis has been confirmed pathologically; in twenty-eight of these cases, moreover, necropsy has been performed.

INCIDENCE

Among 30,000 gynecologic patients of all types who have been treated in the Johns Hopkins Hospital, there have been only two with tuberculosis of the vagina; in a series of 200 cases of tuberculosis of the pelvic organs, Greenberg[5] found only one case of tuberculous vaginitis. Among 6,557 specimens in the laboratory of gynecologic pathology at the University of Pennsylvania, Norris found this lesion only once.

At necropsy, this condition has been found somewhat more frequently. Schlimpert of Dresden found seven cases of vaginal tuberculosis in 2,173 necropsies on female tuberculous patients, and furthermore stated that the vagina was involved in 10 per cent. of all cases of genital tuberculosis. Springer, in a series of 414 necropsies on female tuberculous patients, found ten cases of vaginal tuberculosis, and Simmonds[6] reported five cases in eighty necropsies showing genital tuberculosis.

It is thus evident that tuberculosis of the vagina has been found more frequently at necropsy than in cilincal practice. This may be due to the fact that in many instances the lesions discovered at necropsy occurred in patients who had died of generalized tuberculosis; such patients would not ordinarily be admitted to surgical wards. Moreover, clinicians may have failed to recognize a few cases which pathologists, with their greater facilities, would readily discover. At any rate, it remains a fact that, as a clinical entity, tuberculosis of the vagina is extremely rare.

PATHOLOGY

Primary Infection.—It is the consensus among gynecologists and pathologists that tuberculosis of the female pelvic organs is rarely, if ever, the primary focus of the disease. This applies also to the vagina, for in practically every instance older lesions have been demonstrated elsewhere in the body.

Whenever one speaks of primary tuberculosis of the vagina, the case reported by Friedlaender,[7] in 1873, is recalled. His patient was a woman, aged 30, who died suddenly of cardiovascular disease. At necropsy, a tuberculous ulcer was found in the vagina and no other evidence of the disease could be discovered.

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[*] Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Williams, J. W.: Tuberculosis of the Female Generative Organs, Johns Hopkins Hosp. Rep. **3**: 85-152, 1893.

[2] Springer, Carl: Zur Lehre von der Genese der Vaginaltuberculose, Ztschr. f. Heilk. **23**: 1-25, 1902.

[3] Schlimpert, Hans: Die Tuberculose bei der Frau, Arch. f. Gynäk. **94**: 863-925, 1911.

[4] Norris, C. C.: Gynecological and Obstetrical Tuberculosis, Gynecological and Obstetrical Monographs, New York, D. Appleton & Co., 1921, pp. 140-148.

[5] Greenberg, J. P.: Tuberculous Salpingitis: A Clinical Study of Two Hundred Cases, *Johns Hopkins Hosp.* Rep. **21**: 97-156, 1921.

[6] Simmonds, M.: Ueber Tuberculose des weiblichen Genitalapparates, Arch. f. Gynäk. **88**: 29-59, 1909.

[7] Friedlaender, quoted by Schroeder, R., and Kuhlmann, E. A.: Die Ulcerationen der Vagina, Arch. f. Gynäk. **115**: 145-166, 1922, and others.

Since that time perhaps a half dozen cases of supposedly primary vaginal tuberculosis have been reported (Demme,[8] 1886; Karajan,[9] 1897; Schenk,[10] Kuettner,[11] 1896). Such an assertion, however, should be made only on the basis of necropsy examination, and this requirement has not always been satisfied.

It is quite natural to suppose that in tuberculosis of the vagina the organisms may have been introduced directly, as by coitus, contaminated linen, the fingers or instruments. Students of the subject, however, agree that there is no evidence that this mode of infection is at all common. The vagina is frequently contaminated by large numbers of tubercle bacilli, especially in patients who have tuberculosis of the bladder, uterus or intestine; the rarity of the condition, even under these circumstances, makes one feel that the mere presence of the organisms in the vagina will not produce the lesion. It is possible that this mode of infection may play a larger rôle in infants, for in them the vaginal mucosa is extremely delicate and prone to acquire infections of all sorts. Whether the organisms are conveyed by the blood stream, lymphatics or external means, however, it remains a fact that tuberculosis of the vagina almost never occurs except in patients who have additional lesions elsewhere.

Secondary Vaginal Tuberculosis.—The possibility of relieving a patient suffering from tuberculosis of the vagina depends almost entirely on one consideration; namely, the extent of the tuberculous lesions elsewhere in the body. In studying this all important pathologic and clinical relationship, I have limited my observations exclusively to cases in which necropsy has been performed, a total of twenty-eight patients.

In only one of these have the pathologists failed to demonstrate additional tuberculous lesions in the body, and in this particular case (Friedlaender), reported fifty-one years ago, the findings have been a matter of controversy ever since. In another patient,[8] there was some doubt as to which was the older of the two lesions, the vaginal ulcer or the meningitis of which the child died.

In twenty-six patients, therefore, the vaginal lesion has been indubitably associated with older foci in the body. In summary, these additional lesions have been situated in the following organs: lungs, seventeen times; the uterus or fallopian tubes, fifteen; generalized dissemination, eight; inguinal glands, six; peritoneum, five; intestine, five; the urinary tract, three; the mesenteric lymph glands, three; bronchial glands, one; conjunctivae, one; meninges, one; knee, one; finger, one.

It is apparently unusual to find the inguinal glands involved in adults, for in twenty-four patients over 12 years of age they were tuberculous only once. In ten children, on the contrary, they were involved both clinically and pathologically five times.

Tuberculosis of the Vagina and the Internal Genitalia.—It is frequently stated that tuberculosis of the vagina is almost always secondary to similar lesions in the internal genital organs and that the vagina thus becomes infected mechanically by the tuberculous discharge. This appears to be a rational theory, but the facts compel us to qualify it. Postmortem examination of these twenty-eight patients showed that in only thirteen was the vaginal lesion associated with tuberculosis of the internal genital organs; in fourteen, on the other hand, the uterus, tubes and ovaries were perfectly normal. In one case, as the pelvic organs had previously been removed, this point could not be settled. These were the findings in relatively advanced cases seen at necropsy. If one were to consider the early cases in which the internal genitalia have been declared to be normal clinically on the basis of bimanual examination only, one would find vaginal tuberculosis to be an isolated pelvic lesion even more frequently.

In the thirteen patients in whom tuberculous lesions have been found in both the vagina and the internal genital organs, the cervix was involved twice, the uterine body eleven times, and the tubes eight; the ovaries were consistently normal.

It is thus evident that tuberculosis of the vagina is not always associated with tuberculosis of the uterus or tubes, but that it may often be the only tuberculous lesion in the reproductive system.

Infection by Direct Extension from the Bladder and Rectum.—In four of these twenty-eight patients, the vaginal lesion was due to direct extension from the bladder or rectum with fistula formation. In two of these instances (Springer, Schlimpert), there was extensive rectal tuberculosis with perforation into the vagina, the production of rectovaginal fistula and tuberculous vaginitis. In two cases (Camelot,[12] Schlimpert), there was a similar relationship between the bladder and vagina with tuberculous vesicovaginal fistula. In an additional case (Simmonds), the patient had four small vaginal ulcers, which were apparently due to the contamination by tuberculous urine, without actual invasion of the vagina by continuity or fistula formation. Williams tells of a case reported by de Fontaine in which a tuberculous perineal abscess ruptured into both the vagina and the rectum.

These cases are interesting chiefly to demonstrate how infrequently the vagina becomes infected by tuberculous discharges from the bladder and intestine. The four cases with fistula were probably not of the type that we are discussing in this article, for they undoubtedly were due to the deep ulcerative destruction of the bladder and rectum and thus were not primarily vaginal infections. There is only one case in this series in which there was an independent ulcerative process in the vagina which was attributed to the contamination of the vagina by tuberculous urine or feces.

Pregnancy.—It is well known that many patients date the onset of symptoms in genital tuberculosis from pregnancy. This association has been noted twice in these patients with vaginal tuberculosis. Both of these patients had become hopelessly afflicted with generalized tuberculosis during the last few weeks of pregnancy, and the vaginal ulcers appeared shortly after delivery.

In general, therefore, we may state definitely that tuberculosis of the vagina is practically always secondary to some other focus in the body, that it may or may not be associated with tuberculosis of the uterus or tubes, and that it may be the result of direct extension from tuberculous lesions in the bladder or rectum. That it has ever been contracted by coitus has not yet been proved. The lesion in the vagina may at times be the only active tuberculous focus in the body, and for that reason, as we shall see, may be definitely amenable to surgical therapy.

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[8] Demme: Beiträge zur Tuberculose des Kindesalters: Ueber tuberculöse Erkrankung der weiblichen Genitalien im ersten Kindesalter, Wien. med. Bl. **10**: 1577-1580 (Dec. 15) 1887.

[9] Karajan, E. R. V.: Ein Fall von primärer Tuberculose der Vulva mit Elephantiastischen Veraenderungen der Klitoris, Wien. klin. Wchnschr. **10**: 921-924, 1897.

[10] Schenk, Ferdinand: Tuberkulose der äusseren weiblichen Genitalien, Beitr. z. klin. Chir. **17**: 526-532, 1896.

[11] Kuettner, H.: Zur Tuberculose der äusseren weiblichen Genitalien, Beitr. z. klin. Chir. **17**: 533-536, 1896.

[12] Camelot: Gazette hebdom. de méd. et de chir. **6**: 1017 (Oct. 24) 1901.

CLINICAL ASPECTS OF TUBERCULOSIS OF THE VAGINA

The History.—The family and past histories are often particularly significant in children. In adults they may not be so illuminating. In children it has been noted in several instances that the local symptoms followed attacks of measles, whooping cough or bronchopneumonia. In only one instance [13] has the local lesion been associated with trauma, prolapsus, foreign body or previous vaginal infections. In this case the patient had been wearing a pessary intermittently for ten years because of prolapsus. She had borne six children. At the age of 43, she was admitted to the gynecologic clinic at Basel to be operated on for procidentia. Her general health had always been and at that time was excellent. On examination, it was discovered that the vaginal mucosa was markedly inflamed. The operation was therefore deferred, and for twenty-two days the local infection was given appropriate treatment. The plastic operations were then performed on both the anterior and the posterior vaginal walls. During the dissection, the vaginal mucosa was found to be infiltrated, thick, reddened in places, and horny, and occasional miliary nodular abscesses were found under the mucosa. The tissues were so friable that sutures tore through with ease. Tuberculosis was not suspected, however, until the excised mucous membrane had been examined later under the microscope. The incisions healed by first intention, there were no postoperative complications, and six years later the patient was enjoying perfect health.

Age Incidence

Age	Number of Cases
Under 5 years	8
From 6 to 10 years	2
From 11 to 20 years	4
From 21 to 30 years	5
From 31 to 40 years	5
From 41 to 50 years	2
From 51 to 60 years	1
From 61 to 70 years	2
From 71 to 80 years	3

In some patients the only complaints are referred to the vagina; in others, the symptoms due to tuberculous lesions elsewhere are unmistakable. The local symptoms are persistent and purulent discharge, pain, occasional bleeding, and the incapacitation that the condition would produce. In children, the involvement of the inguinal lymph glands may produce almost as much discomfort as the vaginal lesion. Edema of the vulva, particularly the labia minora and the clitoris, may be marked, especially in children (Kuettner, Schenk, Demme, Cornet,[14] Karajan). In one patient, this led to the diagnosis of elephantiasis. Labial edema has not been noted frequently in adults. Inguinal adenitis and edema of the external genitalia are found most frequently in cases in which the ulceration has extended to the vulva and labia.

Age.—One encounters most contradictory statements in the literature concerning the age at which tuberculosis of the vagina occurs. Thus, Schlimpert, basing his views on seven cases seen at necropsy, stated that it was always a disease of senility or advanced maturity. Opposite views have also been expressed. A survey of the literature assures one, however, that it is not a disease of either the first or second childhood, but, like tuberculosis of other organs, may occur at any age whatever. Like gonorrheal vaginitis, it is found in infants and children; but, unlike gonorrheal vaginitis, it occurs with almost equal frequency during later life, even to the eighth decade.

The accompanying table shows the age incidence of the disease.

CHARACTERISTICS OF THE LESION

Chronicity.—The lesion is particularly chronic and indolent. In my patient, the ulcer had been present for two years without showing any noticeable increase in size or any invasive tendency whatever.

Situation.—In twenty-seven instances, the exact location of the lesion has been stated. In nine cases, it was limited to the lower third of the vagina, in two the middle third, and in four the upper third. In nine cases it was situated on the posterior wall, in five the anterior, and in four the lateral walls. In four infants, the ulceration involved chiefly the vestibule and the clitoris. In four cases, the lesion extended to the labia, and in four the vagina was diffusely involved. It is thus evident that the ulcers may be situated in any part of the vagina; in this series, the posterior surface of the lower third was the region that was most frequently involved.

Type of Lesion.—In thirty-two instances, the lesion has been described. Almost invariably it has been an ulcer. In thirteen, the ulcer was solitary; in ten, multiple; in two it was circular, almost surrounding the vaginal canal. In four instances, the lesion consisted chiefly of multiple nodular submucous abscesses, with occasional ulceration and superficial inflammation involving most of the vagina. In three cases, miliary tubercles were observed near the periphery of the ulcers.

The ulcers may assume a variety of forms. They may be definitely excavated, the margins sharp, undermined, indurated and irregular. At times the edge of the ulcer may be indefinite and may fade away gradually into normal mucosa. On the granulations covering the depressed base, miliary tuberculous nodules have occasionally been found. In other cases, the granulations may be so exuberant that they form a rounded mass, elevated above the vaginal mucosa. These granulations are sensitive and not at all friable. They bleed only slightly when manipulated.

Histology.—Not only at operation, but also on microscopic examination of the tissue, one is surprised to discover how superficial the ulceration may be. Histologically, the lesion has the usual characteristics of a tuberculous process. There is chronic inflammation, loss of tissue, caseation, giant cell formation and tissue proliferation. In my case, the acini of Bartholin's glands were easily found in the sections.[15] Their glandular epithelium was normal, and the gland spaces contained no products of inflammation although the destructive process had almost surrounded them. Tubercle bacilli can be found in the tissue and occasionally also in the vaginal secretions. In the latter case, they must not be confused with smegma bacilli.

Diagnosis.—This has rarely been made clinically, except in patients with other outspoken tuberculosis lesions. Under these conditions, it presents no unusual difficulty. Similar lesions to be distinguished clinically are gonorrheal vaginitis, senile vaginitis, and ulcerative conditions due to trauma, foreign body, prolapsus, syphilis and cancer.

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[13] Labhard, Alfred: Beitraege zur Genital- und Peritoneal-Tuberculose, Ztschr. f. Geburtsh. u. Gynäk. **70**: 532-584, 1912.

[14] Cornet, Georg: Die Tuberkulose, in Nothnagel, H.: Specielle Pathologie und Therapie, Ed. 2, Vienna, Hoelder **2**: 324, 1907.

[15] An authentic case of tuberculosis of Bartholin's gland without the involvement of any other organs in the genito-urinary tract has recently been reported by J. W. Gordon (J. A. M. A. **84**: 1822-1824 [June] 1925).

The differentiation between gonorrheal and tuberculous vaginitis is readily made by microscopic examination of the discharge. Gonorrheal vaginitis, moreover, a disease of children, is practically never an ulcerative process, whereas tuberculosis usually is. In chronic nonspecific vaginitis, a condition usually found in patients of advanced age, the process is also a diffuse superficial inflammation in which there is a marked tendency for the vaginal walls to adhere to each other, producing the well known atresia of senility. This tendency has not been noted in tuberculosis. In ulcerative processes due to trauma, foreign body or prolapsus, the history, the characteristics of the local lesion and the fact that healing usually occurs promptly after the exciting cause has been removed are points in differentiation. It may be difficult to distinguish the lesion from syphilis, particularly when the Wassermann reaction is positive, as it was in Cullen's [16] patient.

The most important diagnostic problem, however, is to be sure that the lesion is not malignant. In contrast with tuberculous ulceration of the vagina, cancer is friable, bleeds easily and profusely when handled, grows more rapidly, invades surrounding tissues, and metastasizes rather early to the inguinal glands. The diagnosis can be determined easily and absolutely by microscopic examination of a small bit of the tissue.

Treatment.—Conservative and nonoperative measures were tried in many of these patients, and almost invariably without avail. It must be remembered, however, that many of the patients were treated before our modern therapeutic procedures and devices had been instituted. Cullen used also radium, roentgen ray and artificial light without noticing any improvement. In several instances, the ulcers were cauterized. Only rarely, however, has the local lesion yielded to any of these measures. Norris records one case (Gorfida) in which curettage and cauterization finally effected a cure.

When the lesion is localized sharply in the vagina, when the upper genital organs are normal, and when the general condition of the patient is satisfactory, the treatment of choice is excision of the ulcer. The inguinal glands should also be removed if they are involved. The operation should be performed under regional or local anesthesia.

The surgical wound may heal by first intention; more frequently, however, it breaks down. There have been several cases in which complete cure has followed the excision of the infected area.

Vaginal tuberculosis, however, has not been cured frequently. In favorable cases, the prognosis is sufficiently good to warrant the use of extirpative procedures. In the majority of patients, however, the presence of active tuberculous lesions in other organs has prevented the adoption of any surgical measures; in such cases, when attempted, operative therapy has only hastened the dissemination of the disease. Even in patients in whom no other signs of tuberculosis could be found, the excision of the vaginal lesion has occasionally been followed by acute and rapidly fatal tuberculous infections.

It is therefore wise to proceed cautiously in the surgical treatment of tuberculosis of the vagina. As the lesion is indolent and progresses very slowly, every conservative measure at our command should be exhausted before surgical intervention is invoked.

In conclusion, I can only quote the teaching of William Stewart Halsted, who was the first to insist that in the treatment of the surgical forms of tuberculosis, success depends on careful coordination of the medical and surgical aspects of the disease.

CONCLUSIONS

Tuberculosis of the vagina is one of the rarest of all gynecologic diseases.

It almost never occurs as the primary manifestation of the disease; at necropsy, in practically every instance, older tuberculous lesions have been found elsewhere.

The vaginal lesion is not always secondary to tuberculosis of the uterus or fallopian tubes; in fourteen of twenty-eight cases examined at necropsy, the uterus, tubes and ovaries were normal.

The treatment and prognosis depend on the activity and extent of the associated tuberculous lesions.

Tuberculous ulcers of the vagina rarely yield to conservative treatment; excision is the procedure of choice. In every instance, however, the therapeutic problem is fundamentally medical, and the patient should be treated from that point of view.

REPORT OF CASE

History.—A woman, aged 46, white, was admitted to Johns Hopkins Hospital, Aug. 1, 1924, because of ulcerative tuberculosis of the vagina, and bilateral, apical, active pulmonary tuberculosis. She was discharged, Aug. 28, 1924. She resided in Vermont and Florida. She was referred by Dr. Joseph Halton of Sarasota, Fla. The patient complained of vaginal ulcers, cough and difficulty in breathing, and pain in the right hip. There was no tuberculosis in the immediate family, and no known contact with tuberculous patients. Her general health had always been excellent until the present illness. During childhood, there were no acute infections except mumps. The patient had had chronic tonsillitis for twenty years, which had been cured by tonsillectomy two years before admission.

Following the tonsillectomy, the patient left Florida to spend the summer of 1922 in Vermont, where she enjoyed her usual good health. On returning to Florida in the fall, she contracted "dengue fever." This illness lasted five or six weeks. The subsequent convalescence was protracted and recovery never complete. Two months later she began to notice a slight cough. In January, 1923, she commenced to have pain in the right hip; this was made a great deal worse by an accidental twist of the right leg sustained while getting out of bed. Because of this injury, she was confined to bed for seven months and was compelled to use crutches for several weeks afterward. The patient still suffers a great deal of discomfort in her right hip.

Respiratory symptoms became more noticeable two months before admission. The cough was not at all distressing; it was brought on chiefly by exertion, and was not productive. There was no hemoptysis. There were no night sweats. Shortness of breath was noticed chiefly on walking.

Vaginal symptoms began two years before admission, when a nodular swelling appeared in each lower quadrant of the vagina just within the external orifice. This swelling was not acutely painful, but was distinctly sensitive when touched. Within a few weeks, these swollen nodules opened spontaneously, discharging greenish yellow pus and leaving ulcerated areas, which had never healed. For two years the condition had been treated faithfully by local applications, douches and the like, and on two occasions the ulcerated area had been thoroughly cauterized by heat. In spite of this and prolonged rest in bed, there had been no healing whatever. The ulcers, however, had not enlarged particularly in this time.

The onset of menstruation occurred at the age of 13; the periods had been regular every month until two years before admission, since which time the interval had been six weeks. The flow was moderate in amount, was painless, and lasted five or six days. There was no intermenstrual bleeding. The patient had been married twenty-five years; there had been no pregnancies.

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[16] Cullen, E. K.: Tuberculous Ulcer of the Anterior Vaginal Wall with Resection of Ulcer, Surg., Gynec. & Obst. **33**: 76-78 (July) 1921.

Physical Examination.—The patient was slightly undernourished and of sallow complexion. Dr. John T. King, Jr., on medical consultation, found chronic active tuberculous lesions in both apexes of the lungs. Tubercle bacilli were not found in the sputum, which was insignificant in amount. Dr. George E. Bennett, who was called in orthopedic consultation, suspected that there might be an early tuberculous lesion in the right sacro-iliac joint, although roentgenograms revealed no pathologic changes.

There was no general glandular enlargement; the glands of the groin were not palpable.

The external genitalia were normal. Because of the extreme tenderness of the ulcers, the vaginal examination was very painful. The vaginal orifice was small, and the muscles surrounding it were held in tight spasm. Just within the introitus, one could see a rounded, granular, slightly elevated, reddened area in the region of the left Bartholin's gland, completely covering the left posterior quadrant of the vagina within the mucocutaneous junction. On palpation, the mucous membrane of the lower third of the vagina felt thickened and was exquisitely tender. The upper part of the vagina and cervix felt normal. The uterus was normal in size, shape, mobility and position. There was no pelvic induration and no mass. The right ovary was about twice as large as normal. Rectal examination was negative.

Catheterized urine revealed no sugar, albumin, white or red blood cells, casts or bacteria. The afternoon temperature was 99.4 F. The pulse rate varied between 80 and 94; the respirations were from 20 to 24. The leukocyte count was 8,800 per cubic millimeter of blood. Hemoglobin was 83 per cent. (Sahli). The blood pressure (Tycos) was 124 systolic and 70 diastolic.

Roentgenographic examination of the chest by Dr. C. A. Waters revealed tuberculous fibrosis of both apexes; there were beginning changes at the right base. Dr. J. W. Pierson found the lumbar spine and sacro-iliac joints normal.

On the basis of these examinations, I concluded that the vaginal lesion was probably tuberculous, although the possibility of malignancy could not be eliminated. It was therefore decided to perform a more complete vaginal examination under regional anesthesia and excise a bit of tissue for diagnosis.

Operation and Result.—August 7, caudal anesthesia was induced, 35 c.c. of 2 per cent. procain solution being introduced through the foramen between the coccyx and the sacrum. By this means the vagina, pelvic floor, perineum and rectum were perfectly anesthetized, and complete relaxation was obtained. Bimanual examination of the internal pelvic organs again revealed no abnormality except a slight enlargement of the right ovary. On inspection, the cervix and upper two thirds of the vagina were normal.

The ulceration almost surrounded the lower third of the vaginal canal. There was a strip about 2 cm. wide immediately under the urethra, which was normal. The ulcerated area was about 2 cm. wide. In this area, the mucosa was entirely missing, being replaced by granulation tissue. The margin of the ulcerated area was sharp in places; in others it blended gradually with the normal mucosa. There was no excavation, the granulations being in places slightly higher than the surrounding mucous membrane. There were numerous gray and red tufts of granulation tissue and miliary nodules scattered over the surface of the ulcer, and a few miliary nodules were seen just beyond the margin of the ulcer. The tissue was not indurated, and could hardly be distinguished from normal mucosa by palpation; the granulations were soft, and bled very little when touched.

It therefore did not look like a malignant lesion. A small wedge of the tissue was removed for microscopic examination and reported not malignant.

The entire local lesion was then quickly excised, the dissection being carried down posteriorly to the levator ani muscles and anteriorly to within 1 cm. of the urethra on each side. The lesion was quite superficial. The base was then cauterized with phenol (carbolic acid) and closed by catgut after mobilization of the adjacent vaginal mucosa. The wound was drained by a small protective wick, which was removed in forty-eight hours.

The postoperative convalescence was entirely uneventful. The wound was examined from time to time, and never showed any evidence of infection. When the patient was discharged from the hospital, the incision was apparently perfectly healed; at one point there was a little overlapping of the mucous membrane, and here epithelization was almost complete. Realizing that the success of the operation and that the life of the patient depended on the care she gave herself in the next few months, I begged her to enter a sanatorium for patients in her condition. This advice, however, was not accepted.

The pathologic report was chronic tuberculous vaginitis. Tubercle bacilli were found in the tissue. Histologically, the lesion presented the usual characteristics of a tuberculous process, showing chronic inflammation, caseation, necrosis, giant cells, and numerous tubercles. Bartholin's gland was easily found in the sections. The glandular epithelium was not in any way altered; the spaces within the glands were normal in size and contained no products of inflammation.

April 27, 1925, I received a letter from the patient's physician, Dr. Joseph Halton, in which he stated that her general health was poor and that he did not expect her to live a great length of time. The vaginal ulcers had broken down again. He also forwarded recent roentgenograms, which showed advanced tuberculous lesions throughout the entire lungs but no evidence of tuberculosis of the skeletal system. She died one month later.

Clinically, the upper part of the vagina, cervix, body of the uterus, tubes and ovaries were normal. From this point of view one would be justified in stating that the lower third of the vagina was the only part of the reproductive tract that was tuberculous. One could not make such a statement, however, without the distinct qualification that all clinical examinations, no matter how carefully performed, are subject to error; from the standpoint of the pathologist, the condition of the uterus, tubes and ovaries was not determined.

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ABSTRACT OF DISCUSSION

DR. HENRY SCHMITZ, Chicago: Dr. Wharton stated that tuberculosis of the female genitalia is secondary to tuberculosis in other regions of the body in 50 per cent. of the cases. Of course, this renders the vaginal or pelvic condition of secondary importance. In cases in which surgery cannot be applied, I began years ago to use physiotherapy in the form of roentgen rays and radium. I was dissatisfied with the results, probably because I could not influence the primary lesion, especially if pulmonary. During the last three years I have used the ultraviolet rays according to the technic devised by Rollier of Switzerland. It is remarkable how this treatment, carefully carried out, will improve the primary as well as the secondary tuberculous infections. Should the primary tuberculous focus become arrested, we then can frequently proceed to surgical eradication of the secondary pelvic conditions with a fair assurance of success. It is hardly necessary to say that the light treatment must be combined with the other forms of treatment, such as proper hygienic surroundings, good food and outdoor life, all of which are helpful.

DR. J. P. GREENHILL, Chicago: In a series of 200 cases of tuberculosis of the fallopian tubes I found only one case of tuberculosis of the vagina. However, aside from the few necropsy specimens, there was little opportunity of studying any sections of the vagina. Even in the cases of total hysterectomy in which a small cuff of the vagina was removed with the cervix, there was very little vaginal tissue available for study. The probabilities are that had a systematic examination of the entire genital tract been made in these cases, there would have been found more than one case of tuberculosis of the vagina.

Dr. Emil Novak, Baltimore: I wish to stress two points: 1. The rarity of tuberculosis of the vagina is no doubt largely explainable by its histologic structure. It is much less like mucous membrane than like skin. It contains no glands, and is covered by a number of layers of squamous epithelium, which near the lower end, especially in parous women, may show some horny change. It is easy to understand, therefore, why it is so resistant to infection. Gonorrheal vaginitis, for example, is very uncommon in the adult, in spite of the great frequency of vulvar and cervical infection. When tuberculosis of the upper generative tract exists, it is probable that vaginal involvement cannot take place unless a portal of entry is furnished by a break in the vaginal surface. 2. The diagnosis should be essentially histologic. Bacteriologic examination is notoriously unreliable, and even if tubercle bacilli were found in the discharge they might well be explained as coming down from the uterus or tubes. The finding of bacilli in the tissues would, of course, be more valuable, but the chief reliance should be put in the demonstration of the characteristic tissue lesions—tubercles, giant cells, epithelioid cells, and so on.

Dr. Lawrence R. Wharton, Baltimore: Dr. Schmitz spoke about the necessity of building up these patients medically. That is of fundamental importance. The high mortality that has attended these cases surgically has been due not to the tuberculosis in the vagina but to the tuberculosis elsewhere. The most important consideration from the medical standpoint is the condition of the lungs. The most important consideration from the surgical standpoint is that in some of these cases the tuberculous lesion in the vagina is the only active process. However, even in these cases one should proceed very cautiously for there are one or two instances on record in which the mere excision of a vaginal ulcer has caused a rapid dissemination of the disease and a fatal result. It is always wise to build up the patients by hygienic and medical attention before attempting to excise the ulcer. Dr. Greenhill mentioned the fact that tuberculous lesions might have been found more frequently in the vagina if the vaginal cuff obtained by complete hysterectomy had always been examined. That note I remember is also in his monograph. All these cases on which I have based my conclusions were examined at necropsy and presumably the whole vagina was examined. I think it is perfectly safe to say that very few cases of tuberculosis of the vagina were missed in this series. There is one author, for example, in Germany, who found seven cases in about 6,000 necropsies. He said that it was a disease which was not associated with tuberculosis of the uterus or fallopian tubes. His experience happened to be limited to one type of lesion. In order to get the proper view of the subject, it is wise to study the whole subject. Dr. Novak made an important point that histologic examination is necessary in order to make a diagnosis. That is why I included no cases in which this procedure has not been carried out. If one were to include all the cases of tuberculous vaginitis not confirmed by histologic examination, one would probably be able to assemble a series of sixty or seventy-five cases; but I thought it wiser to have forty authentic cases than sixty questionable ones.

Tuberculosis of the Hip Joint.—The hesitancy of the profession as a whole in reporting results and our own experience lead to the conclusion that up to the present time operation for bony arthrodesis of the hip joint cannot be rated among the successful surgical procedures. After a careful study of the problem we feel sure that an operative technic eliminating motion of the tuberculous hip joint would, in selective cases, add very materially to our therapeutic armamentarium. It is essential that the operation shall be applicable to children, where the ossification of the femoral head and acetabulum are incomplete. . . . Any type of operation dealing directly with the joint surfaces and depending on maintaining bony contact between head and acetabulum is thus excluded. It would seem that some method of extra-articular fixation offers the best hope of success, especially in children.—Farrell, B. P.: Attempt to Fuse the Hip Joint for Tuberculosis, *J. Bone & Joint Surg.* 7:563 (July) 1925.

TREATMENT WITH INTRAPERITONEAL INJECTION OF NEO-ARSPHENAMIN

REPORT OF TEN CASES *

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Congenital syphilis is of common enough occurrence to require particular attention to the best methods of treatment. Treatment of the child through active treatment of the mother, while partially successful, is often unsatisfactory. The various forms of treatment of the child can be limited to mercury inunctions or mercury by mouth, potassium iodid or the arsenic compounds. The arsenic compounds are the most satisfactory, but their mode of administration to a child is difficult. Intramuscular injections are often accompanied by abscess formation. The ideal procedure of giving them, intravenously, is hampered in the infant by the small size of the available veins and the difficulty of injection into them.

Any method that will offer an easy means of administration, combining safety with rapidity of action, would be the procedure of choice. Rosenberg[1] has reported a case in which the arsenic injection was made intraperitoneally. This procedure was accompanied by experiments on animals as to the formation of adhesions or other peritoneal pathologic conditions. This method has been under observation for four months, and has been studied with the following points in view: first, as a source of danger by permanent peritoneal change, and, second, as to speed of action and actual result of treatment.

The problem of danger to the peritoneal contents was studied in two ways. The first consisted of a series of animal experiments,[2] which are not yet complete; but a brief summary will serve both as a preliminary report on this phase of the problem and as a basis of the clinical work reported.

The safety of intraperitoneal injections as regards life is fairly well established already. Rosenberg reports work on thirty-five rabbits without mentioning any deaths. In our own series, exclusive of acute experiments, fourteen rabbits, nine guinea-pigs and nine dogs have been injected from one to six times, with a total of six deaths occurring. Of these only one death merits consideration as being in any way ascribable to neo-arsphenamin. This animal died of a severe enteritis on the fifth day after its first injection. Twenty-two other animals were injected with the same solution and kilogram dosage that day, and no other animal even suffered from diarrhea. Since this occurred at the start of the series, all animals have been checked daily for diarrhea. No cases of diarrhea without an adequate cause have occurred since.

The work on the safety of intraperitoneal injections as regards permanent changes in the cavity is not yet complete. Since our first aim was to produce as much pathologic change as possible, so that we could study its mode of production and thus know how to avoid it, the work to date appears more ominous than it should. Nineteen necropsies have been held. Five guinea-pigs showed no gross intraperitoneal changes. Five rabbits showed no permanent changes. Of the nine dogs examined post mortem, five showed permanent changes. These changes may be classified as to character and site of injections by quadrants as follows: (1) omental adhesions to itself, three in the upper left quadrant; (2) adhesions of the omentum to the parietal peritoneum, two in the upper left quadrant; (3) adhesions of omentum to the intestine, two in the upper left quadrant, one in the lower right quadrant; and (4) adhesions of the intestine to the mesentery, two in the upper right quadrant. All of the five dogs showed involvement of the omentum chiefly, and four of the five showed these changes following injections in the upper left quadrant. The one dog showing adhesions following injection in the lower right quadrant possessed an unusually long omentum, and this was adherent to both peritoneum and intestine in the region of the injection. Balanced against this result are six single injections or series of injections in the lower quadrants of the abdomen without any local change. Only the two cases of adhesions between the intestine and the mesentery might have been serious in a mechanical way. In these two dogs alone, however, we found an ulcerative enteritis caused by tapeworms.

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* *From the pediatric wards of the Presbyterian Hospital, Chicago; clinical cases from the service of Dr. Clifford G. Grulee.*

[1] Rosenberg, William: The Intraperitoneal Administration of Neo-arsphenamin, J. A. M. A. 82:682 (March 1) 1924.

[2] The experimental work on animals was done in the department of Physiology, University of Illinois College of Medicine, by B. E. Noble.

The second method of studying this problem was by necropsies which were performed on two patients of the clinical series who died from other causes. Patient 1, who died from an infantile intoxication, after six intraperitoneal injections was found to have no adhesions or other signs of pathologic involvement in the abdomen. Patient 5, who died of pneumonia, after two injections of neo-arsphenamin was also found to be free from any abdominal pathologic disturbance.

The rapidity of action is best shown by two cases of hemorrhagic syphilis which were treated in this manner. In the first instance, a child, aged 4 weeks, with hemorrhage from the cord, nose and anus, and with a bleeding time of one hour and fifty minutes and a coagulation time of seventeen minutes, did not improve when given mother's whole blood intraperitoneally and intramuscularly. The bleeding time continued one hour and twenty minutes, with coagulation time eleven minutes. After neo-arsphenamin had been given intraperitoneally, the bleeding stopped in two hours, and the coagulation time fell to six minutes and bleeding time to forty minutes; after another injection, the bleeding time fell to three minutes and coagulation time to five minutes. The second case was one of hemorrhagic syphilis complicating lobar pneumonia. Coagulation time in this instance was four and a half minutes and bleeding time seventy-seven minutes. After 40 c.c. of mother's whole blood was given, the coagulation time fell to four minutes and the bleeding time to forty-eight minutes. After arsphenamin was given intraperitoneally, the coagulation time fell to four minutes and the bleeding time to five minutes, in two hours.

In the clinical cases here reported, the method of administration consisted in a sterile preparation of the abdomen similar to that used in any other intraperitoneal injection. Our method consisted in washing the whole abdomen with green soap and water, then once with alcohol. The ideal site for entrance of the needle is located in the middle of the left rectus sheath, slightly below the level of the umbilicus. This spot was chosen because in many children the liver on the right side will be at the level of the umbilicus, and it is necessary to go below any possible limit of the omentum, and a site too far below the umbilicus will endanger the bladder. This spot was painted with tincture of iodin, which was then washed off with alcohol. The needle, preferably a small gage one, was inserted as for an ordinary intraperitoneal injection. The solution consisted of 150 mg. of neo-arsphenamin dissolved in approximately 15 c.c. of warm, sterile water. The average weight child of 10 pounds (4.5 kg.) should receive 50 mg., or 5 c.c., of the solution. The substance was injected as fast as the plunger would fall in the syringe, and was best sprayed over the peritoneal contents.

In only one instance in which this was given, the first, the baby weighing only 5 pounds (2.3 kg.), did we have any reaction. This consisted of a Herxheimer reaction of livid red patches, slight cyanosis and vomiting. This disappeared spontaneously in ten minutes. We could find no difference in action, in rapidity of injection or in concentration of solution. The amount taken was used simply because 5 c.c. is an easy amount to handle.

It has been our custom to repeat these injections at from three to four day intervals—making two, weekly. There seems to be no particular reason why these cannot be given at more frequent intervals, as they do not seem in any way to affect the nutrition in the child or to cause any digestive disturbance.

The usual treatment consisted of four injections at three day intervals, followed by four injections at seven day intervals. This was usually sufficient to clear whatever pathologic condition due to syphilis existed, including the Wassermann reaction. The child was then turned over to the outpatient department for observation, and then returned to the hospital at the end of one month, when another Wassermann test and roentgenograms were taken. This was essentially the method of procedure in the following cases, one reported in detail, and nine more, briefly:

REPORT OF CASES

Case 1.—C., a girl, aged 4 weeks, admitted, Nov. 7, 1924, had been under mercury treatment for the preceding two weeks. Three days before admittance she had begun to bleed from the nose, and two days later from the umbilicus. On admittance she was bleeding from the nose, mouth, anus and umbilicus. She weighed 5 pounds, 4 ounces (2.4 kg.). Her skin was dry and scaly, and peeling from the palms and soles. There was a generalized adenopathy, and the liver and spleen were both easily palpable. Her hemoglobin was 90 per cent., red blood cells, 4,500,000, and white blood cells, 10,000; the coagulation time was seventeen minutes, and the bleeding time one hour and fifty minutes. The blood platelets were 110,000.

The patient was immediately given 10 c.c. of her mother's blood intramuscularly, and two hours later 20 c.c. of mother's serum intraperitoneally. The following morning the bleeding continued, and 30 c.c. of mother's serum was again given intraperitoneally. The coagulation time was now eleven minutes, and the bleeding time one hour and twenty minutes. A blood Wassermann reaction taken on admittance gave + + + +.

Her condition was now critical. The bleeding continued; the temperature was 105 F., and she was breathing with difficulty. She was then given 50 mg. of neo-arsphenamin intraperitoneally. Twenty minutes later there was a Herxheimer reaction consisting of livid red patches, cyanosis and slight vomiting. This disappeared in ten minutes, and in two hours the bleeding had stopped, while the temperature fell to 100 F.

The following day there was no bleeding. The blood platelets were 225,000, and the coagulation time was six minutes with forty minutes' bleeding time. Roentgenograms showed extensive periostitis.

During the next four weeks, she was given six injections, each of 50 mg. of neo-arsphenamin intraperitoneally, with no reactions. Her condition was excellent, and her weight rose to 6 pounds, 4 ounces (2.8 kg.). At this time a blood Wassermann was anticomplimentary. The blood platelets were 275,000, while the bleeding time was three minutes and the coagulation time five minutes. The hemoglobin was 58 per cent.; red blood cells, 2,500,000, and white blood cells, 11,500.

One month after admission, the patient developed an otitis media with an uncontrollable diarrhea, and died. The necropsy showed syphilitic hepatitis and purulent otitis media. There were no adhesions or pathologic changes of any kind in the abdominal cavity.

Case 2.—V., a girl, aged 3 months, who had failed to gain for one month, appeared on examination to be rather undernourished, and weighed 7 pounds (3.2 kg.). The liver was 3 cm. below the costal margin, and the spleen was easily palpable. There was also a generalized adenopathy. The blood Wassermann reaction was + + + +, and the roentgenograms showed periosteal thickening of all the long bones.

She was given two injections of 50 mg. of neo-arsphenamin intraperitoneally during the week, with no reactions, and during this time gained 5 ounces (0.1 kg.). At the beginning of the second week, her parents insisted on taking her from the hospital, and all attempts to follow the case were futile.

Case 3.—A., a boy, aged 11 months, had had cervical adenitis for fifteen days. There was nothing unusual in the history until this time, except that his mother had had three miscarriages. He was well nourished and weighed 17 pounds (7.7 kg.). The liver and spleen were just palpable, and there was a red fluctuating swelling the size of an orange in the right posterior triangle. The blood examination showed hemoglobin, 70 per cent.; red blood cells, 4,500,000; white blood cells, 22,500, and the Wassermann reaction negative in the cholesterin, and + + in the acetone.

The following day the swelling was opened, and 30 c.c. of sterile pus obtained. Fifty mg. of neo-arsphenamin was then given intraperitoneally as a provocative, with no reaction. The blood Wassermann test was repeated one week later, and was negative in both antigens. The child was therefore discharged.

Case 4.—C., a boy, aged 1 month, had had a swelling of the left hand and a paralysis of the left arm for twenty-four hours. He had had a cold in the head from birth, and his mother had had one miscarriage. He was well nourished, weighing 7 pounds (3.2 kg.), and the examination was negative with the exception of the left arm. This was swollen at the elbow, and while there was no marked tenderness or limitation of motion, the child would not use the arm.

The blood examination showed hemoglobin, 45 per cent.; red blood cells, 2,300,000, and white blood cells, 24,200, with 62 per cent. lymphocytosis. The blood Wassermann reaction on both mother and child was + + + +, and the roentgen-ray examination showed periosteal thickening of the left femur.

Fifty mg. of neo-arsphenamin was given intraperitoneally, with no reaction, and on the following day the child regained full use of his arm. The child was then given four injections of 50 mg. of neo-arsphenamin intraperitoneally, at three day intervals, and four injections at weekly intervals. At the end of this time he weighed 9 pounds, 10 ounces (4.3 kg.), and the blood Wassermann reaction was negative.

When seen again, one month later, the child was in excellent condition, and weighed 12 pounds (5.4 kg.). (It was then 4½ months old.) The blood Wassermann reaction was negative, and roentgenograms were also negative.

Case 5.—F., aged 3 months, had been vomiting for three weeks, with a cough and cold for two weeks. The child was emaciated and acutely ill, with livid skin, and pale conjunctivae. There was also a purulent discharge from the nose. Throughout the lungs there was bronchovesicular breathing; and there was a systolic murmur at the base of the heart. The liver was 3 cm. below the costal margin, and the spleen was easily palpable. There was also a generalized adenopathy.

The blood examination showed hemoglobin, 20 per cent.; red blood cells, 1,740,000, and white blood cells, 3,900, with 60 per cent. lymphocytosis. The coagulation time was four and one-half minutes, and the bleeding time was one hour and seventeen minutes. There were 160,000 blood platelets. Forty c.c. of mother's whole blood was given at once intraperitoneally.

The following day the hemoglobin was 38 per cent.; red blood cells, 2,100,000, and white blood cells, 4,800. The coagulation time was four minutes, and the bleeding time forty-eight minutes. The platelets were now 180,000. The blood Wassermann reaction on both mother and child was + + + +, and the roentgenograms showed periosteal thickening of the long bones. Fifty mg. of neo-arsphenamin was given intraperitoneally, with no reaction.

Following this the child's condition was improved, and the next day the blood showed 28 per cent. hemoglobin; red blood cells, 2,000,000, white blood cells, 5,400, with a 37 per cent. lymphocytosis. The platelets were 210,000. The coagulation time was four minutes, and the bleeding time five minutes.

At this time pneumococci were found in cultures from the blood, and the child died two days later. The necropsy showed bronchopneumonia, and syphilitic hepatitis. There were no adhesions or pathologic changes of any kind in the abdominal cavity.

Case 6.—Z., a girl, had at birth a vesicle on the palm of the hand 1 cm. in diameter, and one on the sole of the foot 0.5 cm. in diameter. The liver and spleen were both palpable. She weighed 7 pounds, 10 ounces (3.5 kg.).

The blood Wassermann reaction was + + + + for the child and both parents, and the roentgenograms showed suggestions of bone changes at the ends of both femurs.

She was given the usual treatment of eight intraperitoneal injections of neo-arsphenamin, and at the end of that time weighed 8 pounds, 4 ounces (3.7 kg.). The beginning exfoliation of the palms and soles had entirely disappeared, and the blood Wassermann reaction and roentgenograms were negative. She was now turned over to the outpatient department for further treatment.

Case 7.—W., a girl, aged 3 weeks, who had failed to gain weight, was thin, weighing 5 pounds, 2 ounces (2.4 kg.), with a mottled and wrinkled skin. The liver was 3 cm. below the costal margin, and the spleen was easily palpable. There was a generalized adenopathy. The blood Wassermann reaction was + + + +, and the roentgenograms showed extensive periostitis of the long bones.

She was given the usual course of neo-arsphenamin intraperitoneally, and at the end of this time weighed 7 pounds, 4 ounces (3.3 kg.). The blood Wassermann reaction was negative, and the roentgenograms showed clearing periostitis.

Case 8.—S., a girl, aged 8 months, weighed 13 pounds (5.9 kg.), and had failed to gain for the past three months. She was small, and had a saddle shaped nose. Her liver and spleen were just palpable, as were the epitrochlears and one intercostal gland. The blood Wassermann reaction was + + + +, and the roentgenograms showed periosteal thickening of the long bones.

She was given the usual course of neo-arsphenamin intraperitoneally, and at the end of six weeks weighed 15 pounds, 8 ounces (7 kg.). The blood Wassermann reaction was negative, but there was no change in the bone findings by roentgen ray.

We felt that further treatment might be necessary in this case, but the parents insisted on removing the child from the hospital. Since that time, we have learned that the child's condition has been very good.

Case 9.—M., a girl, aged 14 months, had a growth in the rectum that had been present for the past eight months. She had a generalized adenopathy, with an easily palpable spleen, and the liver 2 cm. below the costal margin. There was a condyloma, the size of a filbert, 2 cm. from the anus on the right buttock. The blood Wassermann reaction was + + + +, but there were no definite bone changes in the roentgenograms.

The child was given the usual series of eight intraperitoneal injections of neo-arsphenamin, and turned over to the outpatient department for further observation. The lesion had entirely disappeared, and the Wassermann reaction was negative.

Case 10.—P., a girl, aged 2 months, had been suffering from a cold for two weeks. She was emacited, weighing 5 pounds, 4 ounces (2.4 kg.). The skin was scaly, with a pustular dermatitis, and there were rhagades about the mouth and anus. The nose was saddle shaped and discharging. There was a generalized adenopathy, and the liver was 3 cm. below the costal margin, with the spleen easily palpable. The blood Wassermann reaction was + + + +, and the roentgenograms showed extensive periostitis of the long bones.

The usual course of eight intraperitoneal injections was given, and at the end of that time she weighed 7 pounds, 8 ounces (3.4 kg.). The Wassermann reaction was negative, and the periostitis clearing. She was turned over to the outpatient department for further treatment.

CONCLUSIONS

From the results of experiments on animals, and the clinical data obtained from ten cases, we may judge that neo-arsphenamin can be given intraperitoneally to infants with safety. While we do not claim that this method is as rapid as the intravenous injections, the neo-arsphenamin is absorbed with sufficient rapidity to act in any condition. This method is ideal for use in children in whom the small veins make the injection difficult and the condition is of such degree that active treatment is imperative.

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ELECTRIC CATARACT *

WALTER SCOTT FRANKLIN, M.D.
AND
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SAN FRANCISCO

History.—G. C. S., a man, aged 34, referred, Dec. 21, 1923, had received extensive and severe burns on the forehead above the left eye, the right breast and the forearm, Nov. 20, 1922. While working on the roof of a house during the removal of the building, he was to have raised the electric wires with a wooden pole to keep them from interfering, but in some unaccountable manner came in direct contact with the 220 volt live wire and was thrown forcibly to the edge of the roof.

We are indebted to the Aetna Insurance Company for the reports of Drs. Edgerton and Hawkins of Taft, Calif., from which the following summary was derived:

The patient, seen by an ophthalmologist, Jan. 3, 1923, complained of poor vision in the right eye. Careful questioning elicited that seven or eight years previously he had difficulty in passing a physical examination because of poor vision in one eye. Vision of the right eye was 0.3; left eye, 1.0. External examination was negative except for skin lesions. The fundi were normal; no lenticular opacities were present in either eye. The amblyopia of the right eye had apparently again been called to his attention by the accident.

He was under treatment for the burns until June 4, 1923, (seven months after the accident), when he was discharged. The ocular physical findings at that time were unaltered, and the patient had no eye symptoms. He returned, Oct. 10, 1923, complaining of a diminution of vision, which had become apparent two weeks after his discharge; that is, nine months after the accident. Aside from the inability to see well, there were no symptoms. Examination at this time showed vision of the right eye, 0.3, and of the left, 0.1. There were lenticular opacities of both eyes, the opacification being most marked in the left eye. The general physical examination was negative except for the scars resulting from the burn.

The patient was first seen by us thirteen months after the accident.

Examination.—Vision of the right eye was 0.4?; left eye, fingers at 10 feet. In the right eye the external examination was negative. The lens showed fine, grayish, translucent, granular opacities in the capsule and extending deep into the cortex, the nucleus being principally involved. The fundus was visible and grossly negative. There was a large scar over the brow of the left eye, extending toward the malar region; the lens showed granular opacities as in the right eye, but arranged in spokelike formation. The opacities were denser than in the right eye. The fundus was hazy, owing to lenticular opacities; there were no gross changes, and the finer details were not visible. The perimetric fields were normal; the color sense was good. The tension of both eyes was normal.

The patient was kept under observation until Nov. 17, 1924. During this time thyroid therapy was tried, but without result. By April, 1924, the cataract of the right eye had progressed to the extent of reducing vision to 0.2. After that time, it remained unaltered. In the left eye the opacification became progressively worse, and at the time of the patients discharge had reached the mature stage. An operation was refused by the patient, and his final rating by the accident commission was based on his present status.

COMMENTS

With the advent of industrial medicine and the ever increasing use of electricity, we feel justified in reviewing briefly the salient factors of electric cataract as observed in cases produced by commercial electricity. There have been numerous cataracts reported due to lightning; these we have not included in our study.

The first case to be reported due to commercial electricity was that of Brixa,[1] in 1897. A woman, aged 21, was struck by lightning while working at a telegraph instrument. She was unconscious for several hours, and had a severe burn of the nose and the left foot. Two months after the accident, there were fine granular opacities in the capsule and subcapsular portion of both lenses. In addition, there were fundus changes. Three months later, the vision was reduced to 0.1 in either eye. This case, however, although in a sense produced by lightning, was through the intermediary of an electric apparatus, and though we feel it is practically a lightning case, we have included it, as electricity cannot be excluded.

The second case was reported by Desbrières and Bargy,[2] in 1905. While working on a transformer, the patient received a shock of 20,000 volts, which produced an electric cataract. This is in reality the first case of commercial electric cataract. Since that time, there have been occasional reports of such cases.

Considerable work has been done on electric cataract. The typical changes are fine, grayish dots in the cortex, with subepithelial opacities appearing more or less flaky in most instances. Leber,[3] in 1882, reported that he believed these opacities were due to albuminous coagulation; but, as Robinson [4] points out, were this true the opacities would present themselves promptly after the shock. Hess [5] remarks that the early microscopic changes consist of an extensive alteration of the anterior capsular epithelium. Sometimes a considerable mass of dead epithelium is separated from the capsule by a flaky albuminous substance; or, again, the epithelium remains clinging to the capsule while the dying ends of the cortical fibers are separated from it by a small quantity of fluid. For some time after the death of the cells and fibers, the more resistant nuclei may be found in this fluid in clumps. There is also a tendency to vacuole formation. Kiribuchi[6] showed experimentally that the current can cause a subepithelial albuminous coagulation. This is followed by degeneration of the surrounding fibers. More recently, these cataracts have been studied with the slit lamp by Gjessing,[7] Spir,[8] Frese[9] and others. They found that there was a hazy cortex, and that white-gray fibers were present in the lens, which crossed and did not follow the normal lens fibers. These fibers were bandlike and radially arranged.

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* From the Department of Ophthalmology, University of California Medical School.

* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Brixa, J.: Klin. Monatsbl. f. Augenh. **38**: 759-766, 1900.

[2] Desbrières and Bargy: Ophth. Rev. **24**: 217, 1905.

[3] Leber: Arch. f. Ophth. **28**: 255, 1882.

[4] Robinson: Ophth. Rec. **19**: 165, 1910.

[5] Hess: Ber. u. d. Internat. ophth. Kongr. zu Heidelberg, 1888.

There is a vast variation in the appearance time of these lenticular opacities. Strebel,[10] in a series of cases, reports the earliest evidence of lenticular changes three weeks following the burn and the latest after a period of two years. In Robinson's[4] series, the time varied from one to eighteen months. Komoto's[11] case showed no changes for six months, and for three months the lens remained unaltered in Ellett's[12] patient. Seven months after the accident there was no evidence of cataract in our case; but four months later, that is, eleven months after the burn, there were definite lenticular changes. From this it is apparent that the time of appearance of lenticular changes varies a great deal; therefore, the prognosis following an electric burn of the face must be guarded. Particularly in dealing with industrial cases in which the question of compensation is involved, the possibility of the development of electric cataract must be considered for at least a period of two years.

There is a wide range in voltage in the reports of cataracts due to electric burns. Ellett,[12] Bistis[13] and Robinson each report a case following a burn with 500 volts. Komoto's[11] patient received 11,000 volts; Davies',[14] 11,500 volts; Desbrières and Bargy's,[2] 20,000 volts; Dalen's,[15] 21,000 volts; Robinson's second patient, 26,000 volts; Stillsen's patient (referred to by both Ellett and Komoto), 30,000 volts; and Gjessing's[7] patient received 50,000 volts. The voltage in our case was only 220 volts. From this we can conclude that a voltage varying from 220 to 50,000 volts may cause cataracts. As far as we have been able to determine, our patient is the first that developed cataract after a burn of 220 volts. Pfahl,[16] however, reports a case of corneal and fundus changes following a shock of 220 volts, but found no lenticular changes.

In practically all cases of electric cataract, the burn has been on the face and near the eyes. As a rule, the globe nearest the burn shows the most marked pathologic change. In Desbrières and Bargy's patient the right side of the face was injured, and the right eye was the only one involved. One of Robinson's patients had a right sided burn with both eyes involved, but the right more than the left. Another of his patients had only the right eye involved, that side of the face having received the contact. In Brixa's case, in which the nose was the point of entry, both eyes were involved. While both eyes were involved in our case, the left, on the side of the injury, showed the greatest changes. The foregoing generalization is not always true, as shown by Ellett's case, in which the burn was on the left side of the face, and only the right eye was involved.

There may be changes due to electric shock in other structures of the eye without lenticular changes. Pfahl[16] reports a case of corneal and fundus changes after 220 volts; another with contracted fields and loss of accommodation after 6,000 volts, with neither showing lenticular changes. Osborne's[17] patient had optic atrophy without lenticular changes after a burn of 500 volts. Reich[18] and Purtscher[19] also report marked changes in the globe without cataract in two patients struck by lightning.

CONCLUSIONS

1. In dealing with electrical burns about the face and eyes, the possible development of a cataract must be considered for a period of two years. In industrial cases, this possibility should be reported.
2. The lenticular changes of an electric cataract are rather characteristic, the anterior cortex together with the deeper layers of the lens being involved. The opacities as a rule are flaky, although sometimes finely granular.
3. The voltage causing electric cataract may vary from 220 to 50,000 volts.
4. The eye nearest the site of the burn usually showed the most marked changes.
5. Electric burns may cause serious changes in the globe without the production of a cataract.

380 Post Street.

ABSTRACT OF DISCUSSION

Dr. William E. Bruner, Cleveland: My experience with electric cataract is very limited, being confined to one case (*Am. J. Ophth.* **7**:950 [Dec.] 1924). The victim was a man, aged 27, who came into contact with a high tension wire (about 22,500 volts). He was knocked unconscious and was burned about the head and face and also about the feet, so that in consequence he lost nearly all his toes. About eight or ten weeks later he noticed that he could not see well, and his vision gradually continued to fail until he had only light perception. Previously he had good eyes and had never worn glasses. I first saw him, June 14, 1922, about eighteen months after the accident. His general health was good, and a complete general examination revealed nothing that might have any bearing on the eye condition. Examination showed light perception, field and projection normal in each eye. In the right eye the entire lens was white, though not entirely uniform, with some small, irregular spots more densely white on the anterior capsule near the center of the pupillary area. The left eye showed the same condition, though the cataract was possibly not quite so dense. He was told of the possibility of some disturbance of the deeper structures, but an operation was advised. He was sent to the hospital, and two days later a linear extraction was done on the right eye. July 5, a similar linear extraction was done on the left eye. Recovery was uneventful and uninterrupted. The pupillary area in each eye was clear, but a little capsule could be seen in the periphery of each. The vitreous was clear and the fundi showed nothing pathologic. August 30, he was given glasses as follows:

R. E. + 11.00 ○ + 2.00 c. ax 45° V = 5/4
L. E. + 8.00 ○ + 6.50 c. ax 165° V = 5/6

With + 3.00 bifocals added, he read 0.50 print very readily at the normal reading distance Nov. 12, 1924, he reported that his vision had been gradually failing. With glasses, vision of the right eye was 5/15; of the left eye, 5/10. Examination revealed a fine membrane obstructing the pupillary area in each eye; otherwise they were in good condition. In January, 1924, vision in the right eye was 5/30; in the left eye, 5/60. Jan. 7, 1925, we did a discission of the capsule of the left eye and five days later a similar operation was done on the right eye. Jan. 23, 1925, he had a clear pupillary area in each eye and the fundi were healthy. The correction with glasses was found to be:

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[6] Kiribuchi: Arch. f. Augenh. **50**: 1, 1900.
[7] Gjessing, H. G. A.: Brit. J. Ophth. **6**: 447 (Oct.) 1922
[8] Spir: Arch. f. Augenh. **90**: 127, 1922.
[9] Frese: Arch. f. Augenh. **91**: 278, 1922.
[10] Strebel: Schweiz. med. Wchnschr. **51**: 689 (July 28) 1921.
[11] Komoto: Klin. Monatsbl. f. Augenh. **9**: 126, 1910.
[12] Ellett: Ophth. Rec. **15**: 4, 1906.
[13] Bistis: Ztschr. f. Augenh., December, 1906, p. 525.
[14] Davies: Ophthalmoscope **14**: 649, 1915.
[15] Dalen: Ophthalmoscope **8**: 659, 1910.
[16] Pfahl: Deutsch. med. Wchnschr. **34**: 1269, 1908.
[17] Osborne: Clin. Ophth. **22**: 254 (Ophth. Yearbook, 1918, p. 132).
[18] Reich: Klin. Monatsbl. f. Augenh. **16**: 361, 1878.
[19] Purtscher: Arch. f. Ophth. **19**: 195, 1883.

$$\text{O. D.} + 11.00 \frown + 1.50 \text{ ax. } 60 \text{ V} = 5/4$$
$$\text{O. S.} + 9.50 \frown + 1.75 \text{ ax. } 180 \text{ V} = 5/5$$

These were ordered for distance with + 3.00 for reading, with which he could read 0.50 print with ease.

Dr. John O. McReynolds, Dallas, Texas: I should like to report in this connection a case of bilateral cataract in a patient in the third decade of life who was struck by lightning and blown away by a cyclone, being unconscious for several days. After the lapse of a few months he developed a cataract in each eye. When we came to extract the cataracts, it was found that they were rather thin and membranous in character. They were extracted in the capsule, with preservation of useful vision. I think it is immaterial whether the electricity is of the commercial variety or that sent down from the clouds—the result is just the same.

MECHANICS OF BACK STRAINS*

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It is not possible to say anything new about back strains, but it will perhaps be of interest to go over the mechanics of the joints in the different regions of the spine, in order to show the effect of the shift of their relative positions to one another, on the stress brought on the ligaments, and thus to show where strains usually occur.

In regard to ligamentous strains, I believe that we have in the back a condition exactly similar to that which takes place in the feet with improper shoeing, and use. The ligaments of the foot, being repeatedly and continually stretched (when held in improper position), become painful. This does not mean that some persons with partly or very flat feet cannot walk about without pain; for, in that case, the ligaments have been stretched for a long time, have adjusted themselves to their new length, and are painless. I refer to the acute foot strain, and any one who has had it will agree that there is such a condition.

THE GROUP OF CASES

In the clinic of the Massachusetts General Hospital each year there are a not inconsiderable number of adult patients—both men and women—complaining of symptoms referable to the back. The medical, neurologic and surgical including the genito-urinary—examinations are negative. Examination by the roentgen ray is also negative, as far as showing any change in bony structure, either traumatic or pathologic. Yet these patients are more or less incapacitated by their back pain.

A few years ago, the diagnosis was backache, sciatica, neurasthenia, coccydynia, or Hebraic debility. Then came the orthopedic department with a diagnosis of faulty posture, sacro-iliac strain, ptosis, etc. This, then, designates a group of cases with which this paper is to deal.

HISTORY

Some of the patients have had more or less severe injury. Some have occupations that involve constant strain or constant jar, but some have had *no injury* and have little or no occupation—none requiring muscular exertion, at least—and yet all of them complain of a troublesome back.

ELEMENTS

The elements with which we are dealing are weight, and its support by the skeleton, the ligaments, which bind the bones more or less securely together at the joints; and the muscles and their tendons, which move the joints and maintain them in position. (The numerous small joints of the spine are subject to the same infections as the peripheral joints. The question of arthritis of the spine is not considered in this paper, however.)

The column of centra and disks, the physiologic weight-bearing column of the spine, is a flexible rod. It can be bent forward and backward and to either side, and can be twisted, but to no great extent. The motions are but slight at any one segment, and are fairly evenly distributed throughout the column. These motions are governed in the different regions of the column by the shape of the centra, the lipping in the cervical region, and the pitch of the surfaces of the vertebrae and disks in the dorsal and lumbar regions, which combine to make the normal physiologic curves of the column.

The column is braced together by the anterior and posterior common ligaments. The centra also are bound to one another by the peripheral fibers of the intervertebral disks.

The posterior articular columns, attached to the anterior column by the pedicles, and to one another by the union of their laminae at the spinous process, further limit the motions of the anterior column, in certain directions by a bony block, and in other directions by the ligamentous hold where they become the fulcrum of a lever. But these posterior columns are not physiologically weight-bearing columns, although, in certain positions of the spine, they are made to become so. Whenever this happens, the support of the superimposed weight becomes tripodal, and the resilient springiness of the intervertebral disk is partly lost.

The disks are shock absorbers. The facing of the facets on the articular processes of the vertebra below determines the axis of swing of the vertebra next above. In the dorsal spine, these facets face backward and outward, and the center of swing is within the circumference of the centrum. This dorsal region is so firmly braced by the ribs that there is very little motion in the thoracic spine in ordinary bending—the thoracic cage moving as a whole. But the axis of rotation of the dorsal vertebra, when rotation occurs by slow stretching in rotary, lateral curvature, is as mentioned above.

At the dorsolumbar junction, there is a somewhat abrupt change, from the backward and outward facing of the facets to facets which face outward and inward, and this junction is one of the most freely movable regions—both in anteroposterior and lateral bending of the spine as well as in twisting. The twelfth dorsal and first lumbar vertebrae together make a sort of universal joint. The brace of the long ribs has been lost, and the spine is here braced by ligaments alone, and stayed by muscle pull.

This is also true throughout the lumbar spine, but here there is only the little play allowed between the segments.

The lumbar articular facets face outward and inward, but they are slightly convergent toward the front, which blocks any forward slipping of the vertebra above on the vertebra below. Backward slipping is prevented by the upward projection of the superior articular processes of the vertebra below.

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In forward and backward and lateral bending, the articular facets slide upward or downward on one another, as the centrum rocks on the disk.

At the lumbosacral junction—owing to the wedge shape of the body of the fifth lumbar vertebra and its disk and the forward inclination of the top of the sacrum—we have the spine a flexible mast, standing on a base which, in the normal person, has a forward slope of 45 degrees. To maintain its position on this slope, the fifth lumbar is slung between the iliac crest by the iliolumbar ligaments, which come from the sides of the body and the transverse processes of the fifth lumbar, and are inserted into the iliac crests just where the crests bend inward. In fact, I believe this bending inward of the ilia, at the point at which these ligaments and the posterior sacro-iliac ligaments are attached, is produced by the strong, inward pull exerted by these ligaments.

The fifth lumbar vertebra rocks backward and forward and from side to side on the disk between it and the sacrum. It swings rather than rotates; the center about which it swings, being determined by the facing of the superior articular processes of the sacrum, is at about the tip of the spinous processes of the fifth lumbar vertebra. In many persons with hollow backs, the fifth lumbar body is suspended by the iliolumbar ligaments in front of the top of the sacrum and lashed to it by the disk and its ligaments.

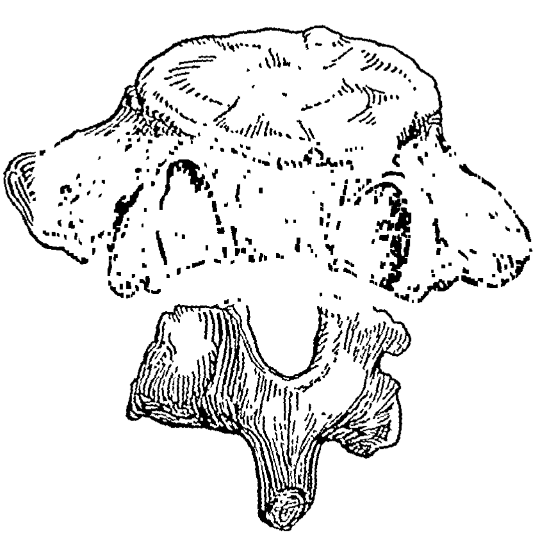

Fig. 1.—Anomaly of fifth lumbar vertebra which could not be detected in the roentgenogram.

An interesting thing about this mechanism is that in lateral bending to the right, this fifth lumbar vertebral body swings to the left, and it is so hung on the articular processes and slung by the iliolumbar ligaments that the two ligaments become tight at the same instant, the transverse process on one side moving slightly upward and backward, so that on the other side moves slightly forward and downward. Thus, the fifth lumbar body equalizes and distributes the weight that is resting on it.

The superior articular processes of the sacrum are the only bony blocks to prevent the forward slipping of the fifth lumbar vertebra on the sacrum, and the top of the sacrum has a normal inclination forward of 45 degrees. In hollow backed postures, the inclination is often 90 degrees and sometimes more. As the bottom of the hip bone (tuber ischii) tilts backward and upward, the inclination is increased, and more weight and strain come on the articular processes and on the iliolumbar ligaments. Such, then, is the junction of the movable spine with the more rigid pelvis.

In order that the mechanism of this lumbosacral joint may be more perfectly understood, I will describe two specimens which show what may happen when this joint is imperfectly formed. For the opportunity of dissecting and studying these two specimens I am indebted to the late Prof. Thomas Dwight and to Prof. John Warren of the anatomic department of the Harvard Medical School.

The usual ossification of a vertebra is from three primary centers. One center forms the body and one forms each lateral mass. The lateral masses unite with the body one on each side at the pedicles and with one another at the back to form the spinous process.

In a certain number of persons the fifth lumbar vertebra is developed from five centers of ossification instead of three, the posterior lateral masses forming from two centers instead of one. Of these two, the anterior forms the pedicle transverse process and superior articular process. The posterior forms the inferior articular process, a lamina, and one half of the spinous process. Every one who has studied roentgenograms of this lumbosacral region knows that the fifth lumbar spinous process is often bifid; that is, the lateral masses have failed to unite at the back to complete the neural arch and to form the spinous process. In the same way the two centers of the lateral mass may fail to unite. There is reason to believe that this abnormality of the fifth lumbar vertebra occurs in 5 per cent. of all subjects examined, as stated by Sir William Turner in his report on the human skeletons in the Challenger reports. The two sides may fuse at the back to form a spinous process, in which case there is one large ossicle composed of two laminae, a spinous process and the two inferior articular processes; or the posterior ossicles of the two sides may be separate from one another, the spinous process bifid, in which case there are two small separate ossicles.

Roentgenograms will show a bifid spinous process, but they do not show an existing cleft between the superior and inferior articular process.

FIRST SPECIMEN

This specimen consists of the pelvis and the third, fourth and fifth lumbar vertebrae of a man. The ligaments are intact. There are a few well marked calcareous overgrowths on the sides of the bodies of the vertebrae and their spinous processes as well as smaller ones on the top of one sacro-iliac joint and on the outer lip of the crest of one ilium.

The spinous processes are present throughout the sacral and lumbar regions, but that of the fifth lumbar is bifid with a separate bony mass for its tip and upper border, which ossicle lies in the bifid cleft. This prong is hard to account for embryologically. The tip might well be formed by the epiphysis of the spinous process, but from what came the prong, the upper border? The third spinous process has impinged on the fourth and each bears a facet. They are massive.

The inferior articular processes of the fifth lumbar on both sides, together with the lamina and a portion of the spinous process, are separate bony masses not attached to one another or to the fifth vertebra except by ligamentous structures. There is an anomalous joint between the top of the lamina and the bases of the superior articular process on each side. In forward flexion of this region, these ossicles are brought up into a somewhat inclined position. In extension, they lie flat on the lamina of the first sacral segment. The superior articular processes of the sacrum are hidden except their inferior part. They point forward. There is a joint between each and its ossicle.

The inferior articular processes and lamina of the fourth lumbar vertebra descend between the superior articular processes of the fifth, to rest on these separate ossicles when the spine is bent back; thus, the bottom of the columns of articular processes has collapsed on the two sides. The laminae of the fourth lumbar vertebra are much more horizontal than normal, apparently having been molded back at their lower edge by the increase of weight on them. The massive spinous processes have shared in the weight bearing.

The body of the fifth lumbar vertebra has slipped downward and forward on the top of the sacrum about half the width of its own body, but does not overlap the top of the sacrum at the front where there has been an additional growth of bone on the sacrum to compensate for this forward displacement, the bottom edge of the fifth lumbar body above the disk being practically flush with the front edge of the top of the sacrum in palpating the dissected specimen. As seen in the lateral roentgenogram, the bony floor of the neural canal shows a downward displacement of the fifth lumbar body of about half its width.

With the specimen in the upright position, the top of the body of the first sacral segment has an inclination of 90 degrees.

The iliolumbar ligaments are well developed, and they extend in a nearly vertical direction from the crest to their insertion in the transverse processes of the fifth lumbar, which are well down in front of the top of the sacrum. The portion of the ilium from which they arise has a slight inward bend over the top of the sacrum, suggesting the result of increased pull on them. Under the existing conditions, the iliolumbar ligaments of course are carrying a larger part of the body weight.

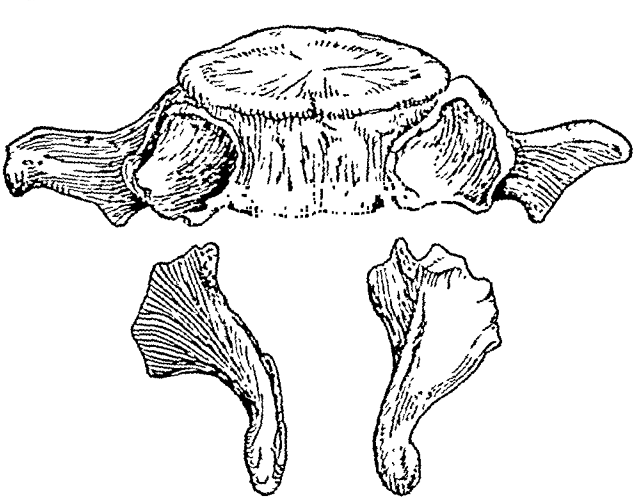

Fig. 2.—Spina bifida would show in the roentgenogram but lateral clefts would not.

The extreme forward pitch of the fifth lumbar vertebra pushes its superior articular processes forward into the intervertebral canals so much that the space for the fourth lumbar nerve root is extremely narrow on both sides.

The anteroposterior diameter of the pelvis from the promontory to the symphysis is about 3 inches.

SECOND SPECIMEN

This is an adult female pelvis, and low lumbar vertebra. Here there is a complete cleft of the sacral spinous processes, none of them having closed to form the neural arch (spina bifida occulta of the sacrum). The spinous process of the fifth lumbar vertebra is also bifid, and there are two separate bony ossicles, one on each side, representing the inferior articular process, the lamina, and one-half the spinous process. They are each attached to the base of the superior articular process of their own side by ligaments, and there are anomalous joints present at this point. In backward bending they became horizontal, lying on the back of the superior articular process of the sacrum, with which process they form a joint. They overlap these articular processes and extend inward on each side, partially to bridge the top of the cleft in the sacrum. When this segment of spine was put into the position of forward flexion, these bony ossicles were lifted upward from the horizontals to take a slightly inclined position. One can see that the horizontal position of the detached ossicles would allow the posterior articular columns to drop downward, and thus occurs a sharp increase of the lumbosacral angle.

In this specimen, the effect of this increase of angle had not been a forward slipping of the body of the fifth lumbar vertebra, but a separation of the intervertebral disk below the fifth lumbar body from the top of the sacrum. The outer fibers of the intervertebral disk and the anterior common ligament remained attached to the sacrum, but had stretched to such a degree that a bellows-like sac had developed. In forward flexion, this sac pushed out in front to form a distinct projection. Unfortunately, in the preparation of this specimen for the Warren Museum this sac was destroyed.

COMMENT

I can give no data as to whether the persons from whom these specimens came suffered from back symptoms or not. But they illustrate some of the effects produced by strain when the bony supports of this region are defective.

There are several specimens in the Warren Museum collection which show failure of fusion between the superior and inferior articular process of the fifth lumbar vertebra on one or both sides, where the spinous process has formed normally, and I believe that it is a much more common defect than is usually supposed. Unless the fifth lumbar body has slipped forward into a position of spondylolisthesis, it is not possible to detect these transverse clefts by roentgen-ray examination.

Spondylolisthesis can be determined by good roentgenograms, anteroposterior and lateral. Dr. L. B. Morrison showed me a roentgenogram of a case of what we believed to be a bellows-like sac similar to that described in the second specimen. The condition certainly exists, and when it is present puts all the weight on the soft parts and increases the likelihood of strains.

The sacro-iliac joints have but little motion, as compared to the spinal joints. Persons get on quite well when these are both ankylosed. They are shock absorbers. The sacrum is slung between the two hip bones by the strong posterior sacro-iliac ligaments and the sacrosciatic ligaments in such a way that, when the top of the sacrum is pushed downward and forward by the weight of the body trunk on the spine, the hip bones are bound more tightly against the sides of the sacrum. The innominate bones grip the sacrum as in a vise. The joints simply open and shut; they are springy buffers. The motion is very slight. These ligamentous structures are strong; and the sacro-iliac joints are much more strongly braced than are those of the lumbosacral junction. Dr. Key, in his analysis of 100 back cases, very justly concludes that the sacro-iliac joints are but rarely strained or sprained, and that the lumbosacral joint is a more frequent source of back and sciatic trouble.

The joint between the coccyx and the sacrum is supported on the sides by the lower fibers of the lesser sacrosciatic ligament. As the top of the sacrum is pushed downward and forward by the weight descending on it through the spine, the tip of the sacrum is forced backward and upward, making the lesser sacrosciatic ligament—which runs forward and outward to the spine of the ischium—tight. Here I want to say, in passing, that when a person falls, striking on the tuber ischii or the back of the hip bones, and the fall is followed by coccydynia, this coccydynia is due, I believe, to a sprain of these ligaments, and not usually to any direct violence done to the coccyx, which is well protected from trauma by the surrounding bony prominences.

Muscles are not weight-bearing structures; they simply pull the bones into a position in which they can sustain weight, and then hold them there. Ligaments and fasciae are of a constant length and but slightly elastic; but, by constant pull, they may be stretched, and by sudden pull, stretched or torn.

REGIONS OF THE SPINE IN WHICH THE STRAINS MOST COMMONLY OCCUR

First, there is the low cervical strain. We are familiar with the hump at the cervicodosal region so commonly seen in round and hollow-backed fat women. Not all of these are painful. They have developed by slow stretching of the ligaments. The tire of the strain is often felt in the region of the trapezius on either side, over the back of the shoulders. Here, normally, the facets look backward and upward; the round-backed position makes them look more upward—in fact, they become almost horizontal; the front of the disk is compressed at the apex of the curve, and upward slipping of the articular facets on one another is made easy. When these humps are developing rapidly, or after a pronounced strain, the pain is often severe—although, at this level, the superimposed weight is but slight. In these acute cases, there is sometimes tenderness over the spinous processes and the supraspinous and interspinous ligaments.

Strains in the thoracic spine are not common. This region is well braced by the ribs. When there are severe distortions, as in scoliosis and in Pott's disease, occasionally there is pain due to strain; but when the deformity develops slowly and is constant, there is surprisingly little pain. With such patients, the pain is more frequently in the accompanying compensatory curves below than in the thoracic curves themselves.

At the dorsolumbar junction, one of the most limber spinal sections, there are frequent strains, chiefly in the round and hollow-backed type of person. Here the facets change abruptly from those of the thoracic type—facing backward and forward—to those of the lumbar type—facing inward and outward. The brace of the ribs has been removed. The round and hollow-backed type, figuratively speaking, sit down in two places at once; that is, on the tuber ischii and on the low thoracic region. The former rest on the chair, but the latter only on air. What they like is a chair in the shape of a brace under this part of the back, to relieve the strain on the posterior ligaments. They tire easily and cannot carry heavy loads; the weight of the head, thorax and upper extremities is too much for them. There was much trouble in the army from this type of back.

There are but few cases which show symptoms that can be attributed to the midlumber spine. Although there are no ribs to brace the lumbar spine, the spinous processes are massive, the articular processes securely locked. This section can be bent forward and slightly backward, and sprung to either side; the motion is evenly distributed, and not very great at any one point. Occasionally, the spinous processes are so large that they impinge on one another in the hollow back types. This blocking of the normal motion may cause strain. The anterior common ligament is under strain, but anomalies of the midlumbar region are rare.

The lumbosacral junction is the point at which the base of the flexible mast joins the more rigid pelvis. The pelvis is, however, far from fixed, for it rocks backward and forward, twists and tilts between the femoral heads when standing. But the pelvis is a bony ring, encircling the base of the spine, and in it and to it the spine is slung, and stayed by its ligaments and muscles. Hung on the articular facets of the sacrum, the fifth lumbar swings to the left when the spine bends to the right, and its wedge-shaped centrum, in so doing, acts as an equalizer, in that it evenly distributes the stress brought on the top of the sacrum.

As mentioned above, the normal average inclination of the facet on the top of the sacrum is 45 degrees; this pitch is often increased, and, in some persons, is much greater; that is, when the bottom of the hip bones (tuber ischii) are tilted far back. Under these conditions, the bony prop of the top of the sacrum is proportionately taken out from under the spine, and the stress is thus made greater on the slings—our iliolumbar ligaments. In this position, the intervertebral disk is compressed more at the back and opened at the front, and the articular facets are pushed down on one another and more tightly jammed together at the bottom. At the same time, the tips of the sacral process push forward into the intervertebral canals. This also brings the lower edge of the transverse process of the fifth lumbar vertebra down close to the back of the top of the wing of the sacrum, which is tilted up by this rocking backward of the pelvis. The fifth lumbar nerve passes through these spaces. In slow stretching of the ligaments from habitual posture, there are not usually any sciatic symptoms, for the nerve slowly makes a groove for itself. But in more rapid stretching from trauma, etc., symptoms referable to the sciatic nerve may develop from injury to the fifth lumbar root.

TREATMENT

I do not remember who was responsible for the couplet:

Little bits of foot strain,
Little squeaky knees,
Make the Goldthwait sickness
Sacro-iliac disease.

But the fact is that the ability to hold the back in the best position to avoid strain certainly depends, to a large degree, on how the body trunk is poised on the feet, knees and hips.

First of all, we should shoe our patients properly, so that the weight is not thrust down on the heads of the metatarsal bones. This does not mean alone the avoidance of high heels, but it means a shoe long enough to avoid pressure of the vamp seam on the metatarsal shafts and heads, preventing their being raised. It means no cramping of the toes. The weight should be carried on the foot in good position, with the arch of the foot held up, and the leg rotated outward, so that the pivots of the knee and ankle are in the same plane; the knees straight, not in hyperextension. This allows the trochanters to be held back and the femoral necks to approach the pelvis, with the normal, forward inclination of 15 degrees, and this forward push props the acetabula upward and forward, and diminishes the possibility of backward tilt of the hip bones and pelvis as a whole. All this is of great importance, as it insures a base on which the upright spine can rest securely.

Dr. Eben Fiske, some years ago, wrote a paper in which he used the term "muscular insufficiency." We should stand up, not hang on our ligaments. The muscles are the long stays of our spines. The proper treatment of these back strains involves getting the muscles into condition. At the same time, patients should be trained to stand in the proper position, so that their bones support the weight. The muscles hold them there. When the ligaments have been torn (it is analogous to a sprained ankle), or when badly stretched, to a chronic flat foot, and the cure is not always an easy or rapid process to accomplish.

In the acute cases of low back strain, a surprising amount can be accomplished by adhesive strapping on the skin, to bind the gluteal muscles together and prevent the backward tilting of the pelvis.

In the severe cases in which real damage has been done, and the ligaments have to shorten and repair, braces and corsets must be used; but one should not lose sight of the importance of developing the muscles, the anterior abdominal wall, the psoas and gluteii, as well as the quadratus lumborum and erector spinae, and get the skeletal frame into the position in which it can support the weight at the best mechanical advantage.

When the back symptoms seem to have developed as the result of a congenitally defective fifth lumbar vertebra, locking of this section of the spine by bone-graft or fusion is necessary to get permanent relief.

166 Newbury Street.

ABSTRACT OF DISCUSSION

Dr. J. A. Dickson, Cleveland: I want to congratulate Dr. Adams on the detail with which he has gone into the problem of the mechanical back strains. In my paper that I read yesterday I tried to show that in seven out of every twelve cases of backache the large proportion of the symptoms were due to a mechanical or congenital defect, and the other five were due to true pathologic conditions. These mechanical defects are very incapacitating, and although they do not in any way influence the patients' lives, they do influence their economic value, and for that reason relief of these conditions is a very important matter. The specimens that Dr. Adams was talking about show that the increased lordosis decreases the size of the intervertebral canal between the fourth and fifth lumbar and the fifth lumbar vertebrae and the sacrum. Also, with increased lordosis, the pressure is not transmitted to the body of the vertebra, but almost entirely to the joints, causing a certain reaction, and the result is referred pain from these joints. The anomalies, such as enlarged transverse processes, I do not feel, on the whole, are productive of pain, but they are more susceptible then to injury from mechanical defects. On the whole, the large percentage of these cases will respond to postural exercises or conservative measures, such as suitable braces or corsets. In the persistent cases, however, an arthrodesis in the lumbosacral articulation is essential.

Dr. J. P. Lord, Omaha: I have developed within the last year, in conjunction with our mechanics, a flexible spinal support. It has seemed to me that these deficiencies in musculature, with overstretched ligaments, and cases perhaps in which there are symptoms of very mild arthritis, and the various classes of cases described by Dr. Adams, should be managed at least part of the time with something less fixed than a rigid spinal support, something like a light corset or flexible brace. Through the suggestion of our mechanic, several laminae of highly tempered steel have been put together, so as to slide on themselves, so adjusted that they may be truly flexible, and by their use we have produced a support that will take off enough of the excess strain to remove the muscle tire in postural cases, and give these patients a brace that is endurable and wearable. Many of these people object to restraint; they object to anything like a plaster cast or a lengthy corset that may even prevent their lacing their shoes. This flexibility also prevents the brace being thrown out behind, as it were, to make it less obvious to onlookers that such a brace is being worn. These braces, therefore, have been worn with extreme satisfaction. I am not a great believer in plaster for ordinary use, and am a great advocate that these patients should indulge in the luxury of a removable support when possible and practicable. Of course, this gives ample opportunity for corrective and developmental gymnastics, for swimming and such other exercises as may be necessary to maintain the musculature of the trunk. This flexible brace has been a little refinement in my work that has been very satisfactory to me, and is greatly appreciated by those who have to be inflicted with wearing devices of this kind.

Dr. Z. B. Adams, Boston: I agree with Dr. Lord that, if back braces are used, they should be light and removable, and that effort should be made to train the patient to adopt a good standing position.

THE EFFECTS OF HEPATIC EXTRACT ON HIGH BLOOD PRESSURE *

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In a series of articles appearing during the last two years, attention has been called to the marked pressor effects of the guanidin compounds and to the possibility that these compounds or allied substances may play a rôle in arterial hypertension. In addition to these observations on the pressor activity of guanidin, the action of various substances that lower this experimental hypertension has been studied. We have studied the effect of such substances as calcium chlorid, potassium chlorid, ammonium chlorid and hydrochloric acid, as well as the action of various tissue extracts, particularly those obtained from the thyroid, testis, ovary, muscle, parathyroid and liver on this hypertension.

As a logical sequence of this work the effect of some of these substances on arterial hypertension in man has been investigated, and some interesting results have been observed. Some striking effects were obtained by the use of tissue extracts, particularly those of the liver, to which reference has been made in a previous article.[1]

The depressor effects of certain tissue extracts on the blood pressure has been known for many years. Oliver and Schäfer,[2] in 1895, found that aqueous and glycerin extracts of thyroid gland, spleen, parotid and submaxillary gland had a marked depressor effect. These observations have been repeatedly confirmed, and Fawcett, Rogers, Rahe and Beebe[3] isolated from the thyroid a "residue" soluble in alcohol, which had a marked depressor action and whose activity apparently

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* From the Department of Internal Medicine, University of Kansas School of Medicine.

[1] Major, R. H.: Observations on the Cause and Treatment of Arterial Hypertension, J. Kansas M. Soc. **25**: 177, 1925.

[2] Oliver, George; and Schäfer, E. A.: On the Physiological Action of Extracts of Pituitary Body and Certain Other Glandular Organs, J. Physiol. **18**: 277, 1895.

[3] Fawcett, G. G.; Rogers, John; Rahe, Jessie M., and Beebe, S. P.: The Effect of Thyroid Extracts upon Blood Pressure, Am. J. Physiol. **36**: 113, 1915.

bore no direct relationship to its nitrogen or iodin content when compared with other fractions obtained from the thyroid. Popielski,[4] in 1911, described a substance to which he gave the name "vasodilatin," a constituent of the thymus, stomach, brain and pancreas, which had a marked depressor effect. Abel and Kubota[5] studied the depressor effects of various tissue extracts, including those of the liver, but were inclined to attribute their action to histamin. Roger,[6] in 1921 and in 1922, described experiments with liver extracts, some fractions of which had depressor effects while other fractions produced an elevation of blood pressure.

Table 1.—*Effects of Hepatic Extract on Normal Blood Pressure* *

Observation	Systolic and Diastolic Blood Pressure: Before Injection	Systolic and Diastolic Blood Pressure: One Hour After Injection	Dosage C.c.	Mode of Injection
1.........	100/60	100/60	1	Intramuscular
2.........	115/70	122/84	1	Intramuscular
3.........	120/70	115/84	2	Intramuscular
4.........	120/92	110/80	6	Intramuscular
5.........	90/40	90/40	2	Intramuscular
6.........	95/70	95/58	2	Intramuscular
7.........	120/68	128/62	2	Intravenous
8.........	132/92	140/94	2	Intravenous
9.........	120/80	130/80	3	Intravenous
10.........	150/80	135/40	5	Intravenous

* No marked reductions noted.

Levin,[7] in a paper dealing with the effects of hypodermic injections of hepatic extract, describes among other results reduction of blood pressure in three patients. More recently, Macdonald[8] has reported the results of the treatment of high blood pressure with liver extracts and has obtained some interesting results. He reports thirty-three patients treated by intravenous injection, with striking effects. In eight patients, however, reactions were obtained, some of which closely resembled protein shock.

Early in our work on this subject we found that liver extracts were much more potent in reducing blood pressure, both in experimental hypertension and in hypertension in man, than were the other organ extracts studied.

After considerable experimentation with various methods of extraction, we have obtained an extract that has a marked depressor effect in certain cases of arterial hypertension, contains a very small amount of protein, and possesses no toxicity in the doses employed. It is prepared from an alcoholic liver mash by a process of alcoholic fractionation, the active substance appearing as a precipitate when an alcoholic concentration of approximately 90 per cent. is reached. This precipitate is dissolved in distilled water and may be further purified by treatment with absolute alcohol, ether and chloroform. In the concentration employed in our work it contains no recognizable amounts of cholin, histamin or peptone, and its pharmacologic action differs in most respects from that of these three substances.[9]

We have obtained some index of the activity of the extract by injecting it into dogs whose blood pressure had been raised by guanidin compounds. The extract has little toxicity, and we have found, for instance, that a normal dog can withstand, without fall in blood pressure, from twenty to thirty times the dose that will lower the elevation in pressure produced by guanidin. We have also found the dose that we have employed therapeutically to have usually no marked depressor effect on the normal blood pressure of healthy persons. Table 1 gives the results of a series of such observations.

In all, we have treated forty-two patients with the liver extract. It has been administered to some patients every day; some of the patients have received it twice daily, while others have received it three times a week, or in some instances only once a week. The extract has been administered intravenously, intramuscularly and subcutaneously. The effect is more prompt after intravenous injection but is also obtained after intramuscular and subcutaneous injections. The immediate effects of this extract are striking (Table 2). Within one hour after injection the blood pressure usually falls, the extent of the fall varying from 20 to 50 or even 70 mm. of mercury. This fall is gradual and as a rule unaccompanied by any symptoms, although occasionally patients who have had a very marked and rapid fall complain of slight dizziness.

Table 2.—*Effects of Single Injection of Hepatic Extract on Elevation of Blood Pressure* *

Observation	Systolic and Diastolic Blood Pressure: Before Injection	Systolic and Diastolic Blood Pressure: One Hour After Injection	Dosage C.c.	Mode of Injection
1.........	160/85	125/75	3	Intramuscular
2.........	170/70	146/74	3	Intramuscular
3.........	170/85	120/48	3	Intramuscular
4.........	195/110	170/90	5	Intramuscular
5.........	220/130	180/110	3	Intramuscular
6.........	220/110	182/90	5	Intravenous
7.........	220/130	178/110	5	Intravenous
8.........	245/125	180/108	5	Intravenous
9.........	230/110	180/100	5	Intravenous
10.........	190/110	120/70	3	Intravenous
11.........	195/110	150/90	5	Intravenous
12.........	205/120	160/100	3	Intravenous
13.........	245/125	180/105	5	Intravenous
14.........	240/135	190/110	3	Intravenous
15.........	188/105	128/90	5	Intravenous

* Doses were larger than those usually employed.

The duration of this fall varies with the patient. In some patients the fall persists only from two to three hours, while in many patients it apparently persists for twenty-four hours and sometimes for several days. Several patients, after receiving from eight to ten doses of the extract, have had a fall in blood pressure which persisted for one week or more. Such an example is shown in the accompanying chart.

The type of patient that has responded most promptly to the injections has been the comparatively young person, without evidence of renal damage or arteriosclerosis. We have, however, apparently obtained very definite responses in some patients with obvious renal insufficiency and a very definite general arteriosclerosis.

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[4] Popielski, L.: Ueber die physiologischen Wirkung von Extrakten aus samtlichen Teilen des Verdauungskanales (Magen, Dick- und Dünndarm) so wie des Gehirns, Pankreas und Blutes and über die chemischen Eigenschaften des darin wirkenden Körpers, Arch. f. d. ges. Physiol. **128**: 191, 1909.

[5] Abel, J. J., and Kubota, Seiko: On the Presence of Histamine (B-Iminazolylethylamine) in the Hypophysis Cerebri and Other Tissues of the Body and Its Occurrence Among the Hydrolytic Decomposition Products of Proteins, J. Pharmacol. & Exper. Therap. **13**: 243 (June) 1919.

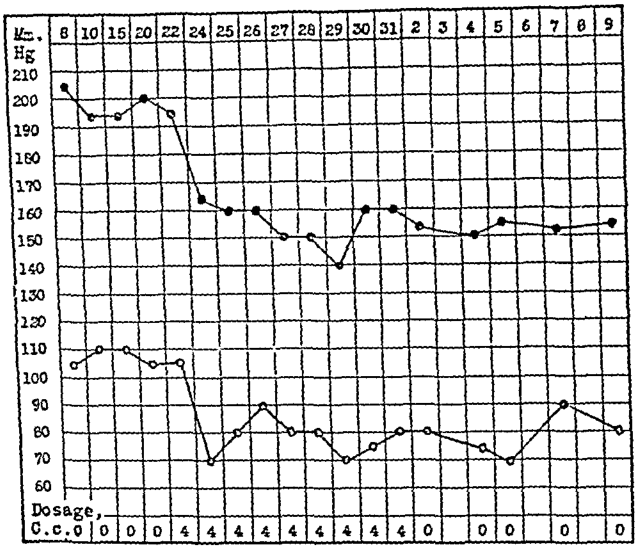
[6] Roger, H.: Action des extraits d'organes sur la pression sanguine, Presse méd. **29**: 901 (Nov. 12) 1921; Les effets cardiovasculaires des extraits hépatiques, ibid. **30**: 441 (May 24) 1922.

[7] Levin, A. L.: My Observations with Hepatic Extract (Soluble) as a Remedial Agent, South. M. J. **15**: 175 (March) 1922.

[8] Macdonald, W. J.: Extractives of Liver Possessing Blood Pressure Reducing Properties, Proc. Soc. Exper. Biol. & Med. **22**: 483, 1925.

[9] Major, R. H.; Stoland, O. O., and Buikstra, C. R.: Observations on the Effects of Liver Extracts in Hypertension Produced by Guanidine Compounds, to be published.

The patients under treatment were for the most part in the outpatient department, in the service of Dr. Donald R. Black. The majority of them had been under observation for more than two years, during which time there had been no constant changes in their blood pressures. The patients were placed on no dietary restrictions; they were told to continue their usual activities, which in many instances entailed hard manual labor. The response in this group of patients was apparently quite as good as in the patients under treatment in the hospital, although more frequent blood pressure determinations were possible in the latter group.



Reduction in blood pressure in a patient, aged 61, who has suffered from arterial hypertension at least two years. Fall in blood pressure persisted for one week after last injection of hepatic extract. Extract administered twice daily in 2 c c doses for nine days in succession. Solid black dots, systolic blood pressure; hollow dots, diastolic pressure.

The average age of the patients was 50, the oldest being 72, and the youngest 34. Thirty-two of the patients were women, and ten were men. Although a definite fall in blood pressure usually followed injection of the hepatic extract, all patients did not at all times show such a fall. Six patients were quite refractory to the injection. Three of these patients declined to pursue the treatment further; a fourth patient died while under observation. At necropsy this patient showed a most intense arteriosclerosis involving the splanchnic area, a finding that may bear some relationship to the lack of effect shown by treatment.

No toxic effects from the treatment appeared in any patient. The extract produces a very slight burning on injection, which is no more uncomfortable than any type of hypodermic medication. Our observations indicate that such a preparation has in certain patients an immediate effect on the high blood pressure in arterial hypertension and, when repeated treatments are employed, apparently produces a more lasting fall in blood pressure

Conclusions as to the therapeutic value of such a preparation can be drawn only after study of a large number of patients over a long period of time. Patients suffering from arterial hypertension often show great variation in blood pressure produced by nervous influences, by cardiac complications, or by causes entirely unrelated to the treatment. Such complications often lead to errors in conclusions. Further study of the liver extract should indicate whether it is effective in the group of so-called malignant hypertensions or whether its effectiveness is limited to the benign group which may show response to certain drugs and dietary measures. Additional observations are necessary to determine whether a patient whose pressure has fallen will continue to show this fall as the result of repeated treatments.

PELVIMETRY OF THE SUPERIOR STRAIT BY MEANS OF THE ROENTGEN RAY*

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Attempts to determine the diameters of the pelvic inlet by the use of the roentgen ray were made as early as 1897, when Budin[1] and Varnier[2] reported their attempts to determine the size of the pelvic inlet by this means. From that time until the present, numerous investigators have worked on this problem with varying results, none of which possess practical application. In 1918, I became interested in roentgen-ray pelvimetry, and in 1922 published my first experiences in outlining the superior strait of the pelvis by means of the roentgen ray.[3] In the interval, the method has been improved and simplified, and the technic described in the present paper represents a procedure by means of which it is possible to obtain a graphic outline of the pelvic inlet and so readily to measure its diameters with unusual accuracy.

The chief difficulty to overcome in consideration of roentgen-ray pelvimetry may be said to be twofold: first, the position of the patient, and second, the distortion that takes place because of the distance of the plane to be measured from the sensitive photographic plate. The latter is caused by the divergence of the rays, from the target to the plate (Fig. 1). In order that the distortion thus produced may be equal in all directions,

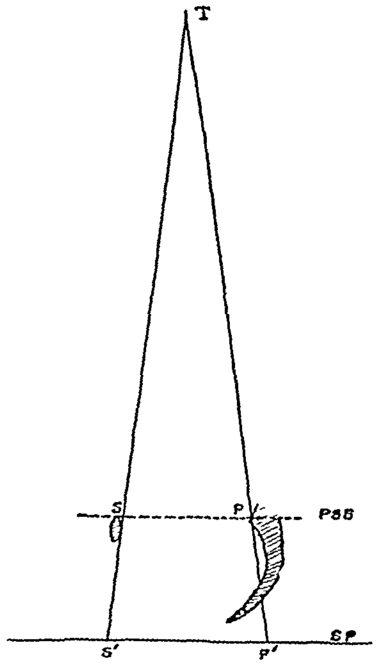

Fig. 1.—*S,* symphysis; *P,* promontory; *PSS,* plane of superior strait; *T,* target. If target is placed over center of superior strait and that plane is parallel to the sensitive plate, we shall have projected at *S'* and *P'* a shadow of the superior strait slightly and equally enlarged.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Budin: Photographie par les rayons x d'un bassin de Naegele. L'obstetrique 2: 499, 1897.

[2] Varnier: Étude anatomique et radiographique de la symphyse pubienne après le symphyseotomie, Comptes rend. Soc. d'obst., de gynéc. et de paed de Paris 1: 209, 1899.

[3] Thoms, Herbert: Outlining the Superior Strait of the Pelvis by Means of the X-Ray, Am. J. Obst. & Gynec. 4, No. 3, 1922.

it is essential that the target or tube be placed over the center of the superior strait, and that the plane of the superior strait itself be parallel to the sensitive plate beneath. In the living subject, it is possible to accomplish this by placing the patient in the semirecumbent position, with the back arched in a manner to be described (Fig. 3).

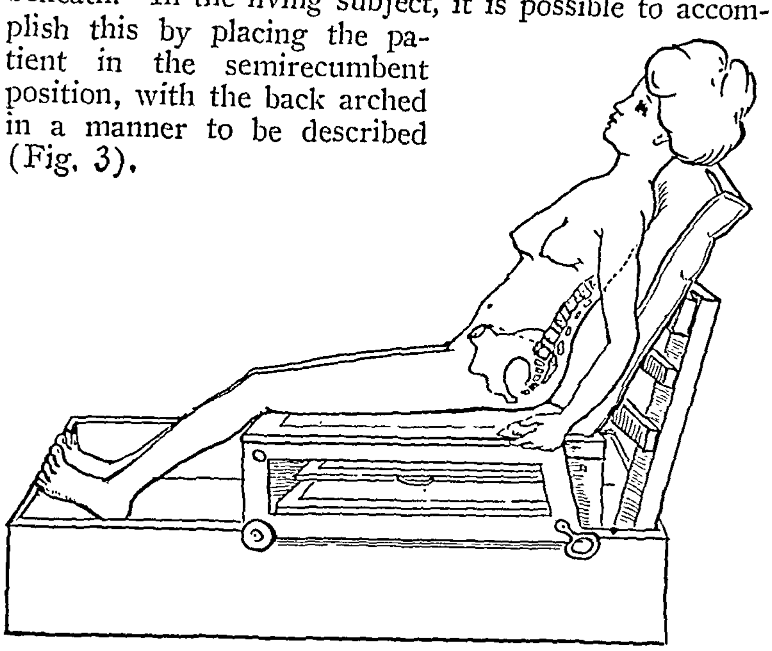

Fig. 2.—Patient in the usual recumbent posture: Plane of superior strait is not parallel with sensitive plate; the correct relation is obtained by having patient assume the position shown in Figure 3.

The first procedure, therefore, is to identify two points on the body of the patient which will enable us to identify the plane of the superior strait. These are located anteriorly 1 cm. below the superior border of the symphysis and posteriorly at the depression just below the spine of the fourth lumbar vertebra. An imaginary line extending between these two points traverses the anteroposterior diameter of the superior strait. With the patient in the ordinary sitting posture, it is noticed that the symphysis rests in a plane much higher than that of the promontory of the sacrum (Fig. 2). If, however, the patient assumes the position shown in Figure 3, it will be noticed that as the back becomes arched the symphysis becomes lowered and the promontory raised, so that the plane of the superior strait becomes horizontal. With the patient in this position, the target or tube being placed over the center of the plane, an exposure taken projects on the sensitive plate a slightly and equally enlarged shadow of the inlet of the pelvis.

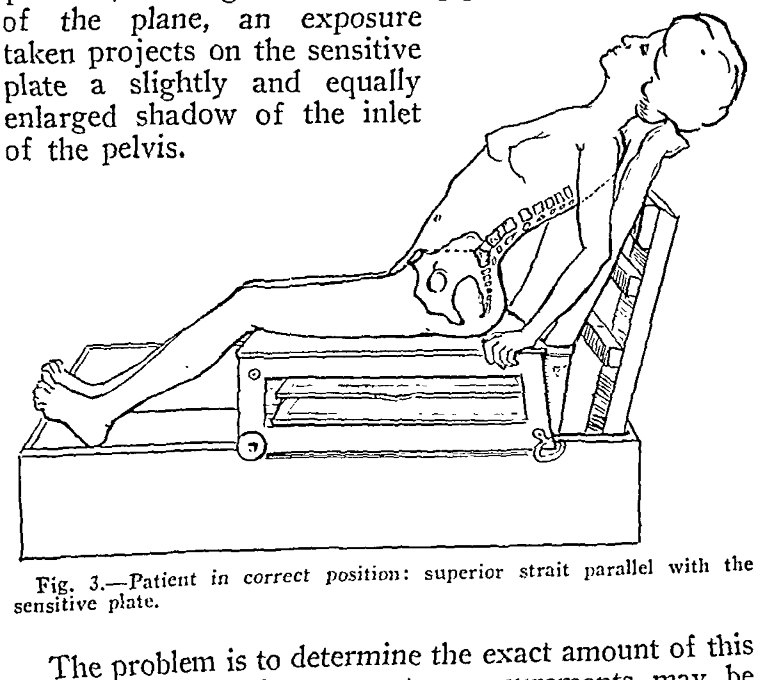

Fig. 3.—Patient in correct position: superior strait parallel with the sensitive plate.

The problem is to determine the exact amount of this enlargement, so that accurate measurements may be deduced. This is accomplished by the use of a lead strip notched in the form of a rule, which is laid over the plate itself when the exposure is made. The strip is so ruled that the distance between adjoining notches represents the distance of 1 cm. in the plane of the superior strait. The ruling of these lead strips is determined as follows (Fig. 4): If we place in a plane, say 11 cm. above the sensitive plate, a lead screen composed of strips of lead 1 cm. wide, and take an exposure through this screen with the tube 36 inches above the plate, we shall have projected on that plate a series of parallel lines which will be slightly more than 1 cm. apart, but which will nevertheless represent the distance of 1 cm. in the plane of the lead strips above. If we carry out this procedure at different levels, beginning 9 cm. above the plate and continuing at centimeter intervals up to 19 cm., we shall have a series of exposed plates with parallel lines. The distance between two of these lines in any given plate will represent a distance of 1 cm. in the corresponding plane above.

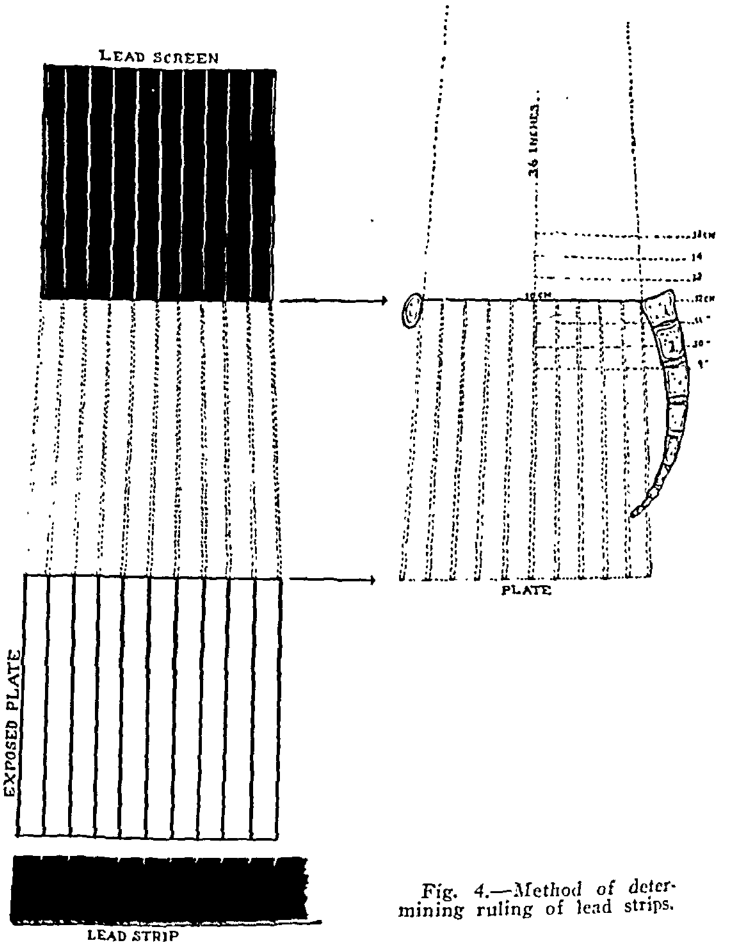

Fig. 4.—Method of determining ruling of lead strips.

In order to apply this method of scaling to the superior strait of the patient, it becomes necessary to determine the distance of the superior strait above the sensitive plate, and then to place the notched strip which corresponds to this distance directly on the sensitive plate. With the patient in position, the back arched and the superior strait made parallel to the plate, the distance of the superior strait above the plate is measured with ordinary calipers. If, for instance, this distance is 12 cm., then lead strip No. 12 must be used for scaling the slightly enlarged shadow that will result from the exposure. The exposure is made with the patient in position, and the development of the plate results in a slightly enlarged outline of the superior strait, and on the edge of the plate a scale formed by the notches in the lead strip. By means of the calipers, any diameter of the superior strait may be directly measured on the film, the distance being read immediately on the scale at the edge of the film.

The patient is placed on a Bucky diaphragm resting on a simple wooden frame, as shown in Figures 5 and 6. The Bucky diaphragm we have found insures much better pictures, while the frame is essential because the foot and back rest enables the patient better to maintain the position during the exposure. For purposes of identification, a small tab of adhesive plaster is placed in the depression under the fourth lumbar vertebra, 1 to 2 cm. above the upper point of Michaelis' rhomboid. The tube is centered over the superior strait, and as a standard always 36 inches above the plate.

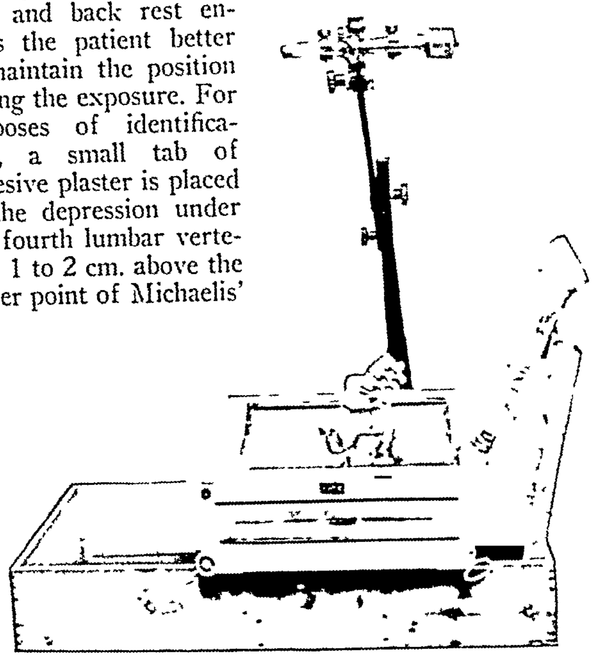

Fig 5.—Bucky diaphragm placed on wooden frame.

I have tabulated below the roentgen-ray technic that has given us the best results.

ROENTGEN-RAY TECHNIC USED FOR PELVIC MEASUREMENTS

Duplitized superspeed films, double screen with Bucky diaphragm, and a medium focus Coolidge tube are used. The target plate distance is 36 inches. A point spark gap distance of 7 inches is employed, which is equivalent to approximately 65 kilovolts. The amount of current is 20 milliamperes, and by using a milliampere meter in filament circuit this voltage can readily be obtained without passing the current through the tube.

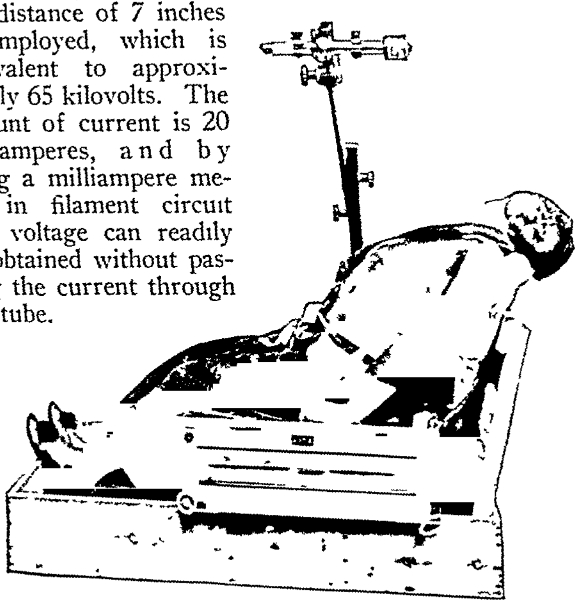

Fig 6.—Correct position of patient on Bucky diaphragm.

A medium focus Coolidge tube will run very easily up to approximately twenty seconds at this setting without greatly overheating. There is no apparent reason why with a heavy patient the tube may not be allowed to cool for ten or fifteen seconds, the patient holding arched position, with possibly a second setting of the Bucky diaphragm.

Time

Pregnant		*Nonpregnant*	
Thin	16 seconds	Thin	10 seconds
Medium	20 seconds	Medium	14 seconds
Heavy	30 seconds	Heavy	17 seconds

COMMENT

When one considers the problem of measuring the diameters of the superior strait in the living subject, one is quite convinced that only by means of such an agent as the roentgen ray can this be accomplished for practical purposes. Obstetricians for many years have devoted much time to the study of this problem, and the various procedures described and the number of instruments invented for this purpose are silent witnesses to the inefficacy of the results. In the method just described, the technic, as compared with the complicated methods heretofore used in roentgen-ray pelvimetry, is one of unusual simplicity. After the relative distances of the various planes above the horizontal have been established and calibrated on the lead strips, no further calculation becomes necessary and the procedure then is simply one of taking a roentgenogram.

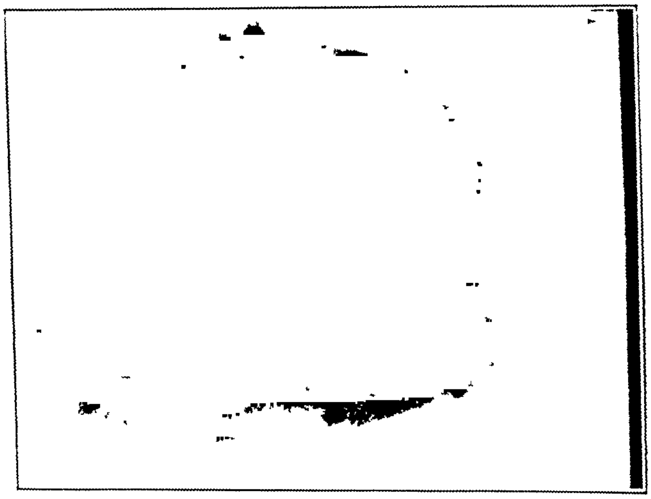

Fig 7.—Outline of superior strait slightly enlarged; scale at side in corrected centimeters; any diameter of this plane may be measured by means of this scale and an ordinary pair of calipers.

Pelvimetry of the superior strait by means of the roentgen ray has a very valuable practical, as well as a scientific, application in the practice of obstetrics. It should have a place in all obstetric clinics where teaching and classification of pelves is carried on. It has a distinct practical application in cases in which a contraction of the superior strait is suspected, or those in which there is nonengagement of the fetal head at term. In the latter circumstance, the size and shape of the fetal head must, of course, be considered. We are now developing a similar method for measuring the biparietal diameter of the fetal head in patients at term, the results of which will be published at a later date.

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ABSTRACT OF DISCUSSION

Dr. Ludwig A Emge, San Francisco: Dr. Thoms is to be congratulated that he has introduced a method which apparently is much simpler than the other difficult mathematical methods that have so far been used. I have for the last six years followed the work of Chamberlain and Newell in our clinic at Stanford. We measured about 500 pelves and attempted to take the radiologic measurements. I wish to go on record right now by saying that this is not a final definite method. I do not wish to take exception to Dr. Thoms' paper, but I want to say that when one considers the radiologic points one is talking about individual interpretation. Radiologically, we are dealing with mathematical equations that are no larger than a pinpoint in order to avoid shifting, and we have to prove to our own satisfaction that there are no five radiologists in the same department who can put that point at the same place. That makes a difference in deciding whether the patient should have a cesarean section or not. We have also found in cesarean section that it is not possible to get the radiologic findings translated into actual terms because of the shifting of the planes. I take exception to Dr. Thoms' paper simply because even if he puts his patient in position he cannot tell whether the points are exactly correct. Nor can he definitely tell from a flat plane picture whether the promontory is an inch or more closer to the sacrum. I still believe that while radiologic investigations in pelvic measurements are of distinct aid, the final word cannot be said, except by manual palpation translated into terms of experience collected over a number of years and on a great number of patients.

Dr. Herbert Thoms, New Haven, Conn.: We have also taken a great many pictures and we have purposely varied the distance of the tube away from the center of the plane of the pelvis; that is, we have shifted it an inch one way or an inch the other way and found that the amount of distortion is so slight that for obstetric purposes it may be ignored. The result did not vary more than 0.25 cm. and for obstetric purposes that is negligible. With regard to having the planes of the pelvis horizontal, we do not have much difficulty in making the plane horizontal, simply measuring it and having the patient lie still. We have checked this by patients who have been subjected before roentgen-ray examination to laparotomy in which the direct conjugate was measured and by patients who were subjected to laparotomy following the roentgen-ray exposure. The method in our hands for five years has checked up exceptionally well.

Highway Signs Notifying Approved Water Supply.—The Minnesota State Board of Health is arranging for the posting of signs on public highways entering certain municipalities in the state informing the traveling public, particularly the tourist, that the water supply of the particular town has been approved as safe by the state board of health. The signs will be approximately 18 inches in width by 24 inches in height and will be attached to the standard of the highway sign bearing the name of the municipality. Municipalities which are permitted to post these signs agree to have the water supplies investigated at least once each year and to make any reasonable changes, alterations, improvements or repairs to the water supply system that may be necessary from time to time in order to maintain the system is a satisfactory and approved condition, and also agree to advise the state board of health in advance when any changes in the system are contemplated and to notify immediately the state board of health in case of any accident to the system that might impair the sanitary quality of the water. These municipalities further agree to make no objection to the removal of the highway signs in case the water supply is at any time found to be in a condition that would be considered unsatisfactory from a sanitary point of view by the state board of health. It is felt that the posting of these signs advising the traveling public, particularly the tourist, as to which water supplies are safe for drinking purposes will give information which will be greatly appreciated by many. Incidentally, it is good advertising for the municipality and should encourage other cities and villages whose water supplies are not already safe to make the necessary changes so as to place them on the approved list.—*Pub. Health Rep.* **40**:787 (April 17) 1925.

PATHOLOGIC CHANGES IN LUNG FROM USE OF MERCUROCHROME-220 SOLUBLE *

H. J. CORPER, M.D.
DENVER

New drugs introduced clinically and recommended for their value in a limited number of conditions by the original experimental investigators frequently run the clinical gamut of trial for every known condition, when unforeseen obstacles arise which require for elucidation the cooperation of the experimental pathologist.

Mercurochrome-220 soluble was introduced as a valuable new mercury antiseptic for use in the genito-urinary tract by Young, White and Swartz,[1] in 1919, who found it to exceed other mercury preparations in its ready penetration of the tissues in which infection exists, lack of irritation to the tissues, high germicidal activity, ready solubility in water and stability of the solution, freedom from precipitation in urine, and sufficiently low toxicity to avoid systemic effects from the small amount of the drug that may be absorbed.

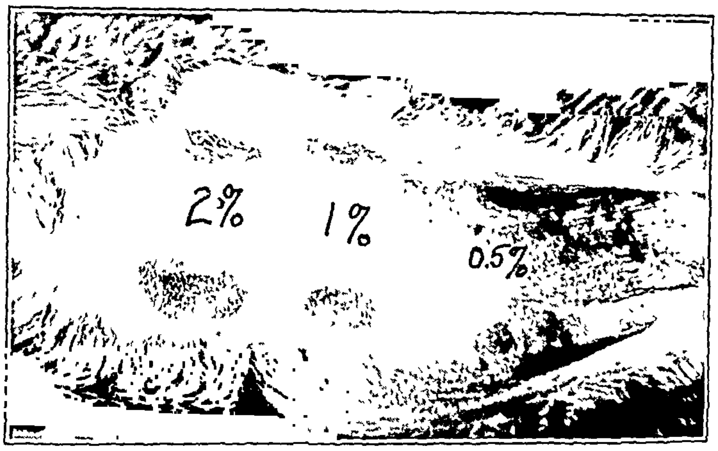

Fig. 1.—Results of the intracutaneous injection of mercurochrome after one day; a zone of hyperemia and edema surrounds the mercurochrome stained sites of injection.

A 1 per cent. solution for five minutes did not irritate the bladder, ureters or kidney pelvis of rabbits, but stained the cytoplasm of the cells of the epithelium and submucosa deeply. Intravenous injection of 10 mg. per kilogram of body weight in dogs, and 5 mg. in rabbits produced no harm within twenty-four hours except transient albuminuria, but no kidney damage. In the conjunctiva of rabbits, 1 per cent solutions produced no irritation. Solutions of from 0.1 to 5 per cent. were used in the human genito-urinary tract, and 1 per cent. in the kidney pelvis, with no sign of irritation. In the urethra, a 5 per cent. solution caused only temporary burning when retained for five minutes. A solution of 1:1,000 killed *B. coli* and *Staphylococcus aureus* in urine in one minute. It was these attributes which later led Young and his colleagues to utilize mercurochrome by intravenous administration for treating septicemia and local infections,[2] and finally scarlet fever complicated with erysipelas and streptococcus septicemia.[3]

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* From the Research Department, National Jewish Hospital for Consumptives.

* Read before the Section on Pathology and Physiology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract—"Mercurochrome-220," J. A. M. A. **73**: 1483-1491 (Nov. 15) 1919; Further Clinical Studies on the Use of Mercurochrome as a General Germicide, ibid. **77**: 93-98 (July 9) 1921.

[2] Young, H. H., and Hill, Justina H.: The Treatment of Septicemia and Local Infections by Intravenous Injections of Mercurochrome-220 Soluble and of Gentian Violet, J. A. M. A. **82**: 669-675 (March 1) 1924.

Favorable reports on the use of mercurochrome, usually in from 1 to 2 per cent. solutions, are recorded from many fields of medicine, including ophthalmology, by Lancaster, Burnett and Gaus,[4] and Clapp and Martin;[5] dentistry, by Darnall;[6] surgery, by Johnson[7] and Martin;[8] urology, by Ockerblad,[9] and the clearing up of diphtheria carriers by Gray and Meyer.[10] Bray[11] used it in general practice in a variety of cases, and in addition reported one case of acute empyema in which solutions of from 0.02 to 0.4 per cent. were instilled into the chest with good results. Swartz and Davis[12] found mercurochrome, when freshly prepared, especially germicidal to the gonococcus.

Table 1.—*Effect of the Intratracheal Injection of Mercurochrome-220 Soluble on the Lung*

Dog	Concentration of Mercurochrome, per Cent.	Amount Injected, C.c.	Time Interval	Gross Findings	Microscopic Findings	Comment
2	2	2.5	22 hours	Acute pneumonia in both lower lobes	Marked intra-alveolar hemorrhage, with focal abscesses	Dog died [*]
3	2	2.5	12 days	Large consolidated areas in both lungs	Proliferative granulation tissue, pneumonitis	Dog had recovered from the acute pulmonary effects of mercurochrome, and was killed with gas
6	1	2.5	1 hour	Acute pneumonia in lower lobes posteriorly	Hemorrhagic and desquamative pneumonia	
10	1	5.0	22 days	Focal abscesses and resolving pneumonia	Multiple pulmonary abscesses and proliferative pneumonitis	Dog died
13	0.5	5.0	3 days	Acute hemorrhagic pneumonia of parts of upper and lower lobes on both sides	Marked intra-alveolar hemorrhage, with focal necrosis	Like microscopic findings attained in Dog 12 after 2 weeks, with slightly more proliferative and granulation tissue reaction
15	0.1	5.0	4 days	Acute (congestive ?) pneumonia of left lower lobe and posterior right lower lobe	Mild intra-alveolar hemorrhage, with proliferative pneumonitis	In this concentration of mercurochrome the lung involvement was of less degree and extent in the 3 dogs injected and examined after 1, 4 and 7 days than in the foregoing higher concentrations
17	0.01	5.0	1 day	Mild congestion and edema of left upper and upper portion of lower lobe	Slight desquamative and edematous alveolitis, with fibrin and a few erythrocytes	Dog 18 proved negative, while Dog 19 presented a few small suspicious pulmonary areas, which could not be conclusively attributed to the mercurochrome
20 & 21	Saline control	10	2 days and 1 week	Negative		

[*] The two dogs receiving the 5 c.c. of 2 per cent. mercurochrome solution died as a result of the injection, after twenty hours and three days; one of the three dogs receiving 2.5 c.c. of 2 per cent. solution was killed after one hour, one (Dog 2) died after twenty-two hours, and one (Dog 3) lived for twelve days. One of the animals receiving the 1 per cent. mercurochrome intratracheally died after twenty-two days.

That the original experiments did not warrant the unlimited universal use of mercurochrome may be surmised from a few of the adverse clinical reports available. Thus, Guy[13] reported the occurrence of stomatitis and diarrhea in a patient whose tuberculous sinus was treated with 1 per cent. mercurochrome; Bunten[14] records salivation after the intravenous use of 1 and 2 per cent. solutions, and McKinnie[15] found undesirable effects followed its introduction into tuberculous cavities.

De Witt[16] found that by subcutaneous injection into guinea-pigs, mercurochrome (concentrations are not given) produced induration, necrosis and ulceration of the tissues around the point of injection. That the tissue effect of mercurochrome in the commonly used concentrations is not concerned with the immediate present is first voiced by Rolnick,[17] whose report appeared during the progress of the studies to be recorded below. Rolnick performed twenty vasotomies on dogs, and injected the vas of ten with a 2 per cent. mercurochrome solution, and ten with a 3 per cent. solution. In all but two of those killed after ten days,

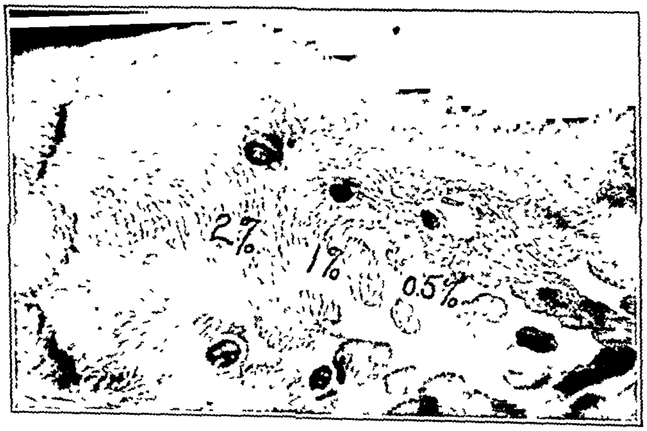

Fig. 2.—Results of intracutaneous injection of mercurochrome after seven days; undermined ulcers at sites of injection.

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[3] Young, H. H., and Birkhaug, Konrade: The Cure of Scarlet Fever Complicated with Erysipelas and Streptococcus Septicemia, J. A. M. A. **83**: 492-494 (Aug. 16) 1924.

[4] Lancaster, W. B.; Burnett, F. L., and Gaus, L. H.: Mercurochrome-220: A Clinical and Laboratory Report on Its Use in Ophthalmology, J. A. M. A. **75**: 721-724 (Sept. 11) 1920.

[5] Clapp, C. A., and Martin, M. A.: Use of Mercurochrome-220 as a Germicide in Ophthalmia Neonatorum: A Preliminary Report, J. A. M. A. **74**: 1224 (May 1) 1920.

[6] Darnall, W. L.: Preliminary Report on Mercurochrome-220, as a Germicide in Dentistry, U. S. Nav. M. Bull. **15**: 194 (Jan.) 1921.

[7] Johnson, L. W.: Note on the Use of Mercurochrome-220 Within the Peritoneum, U. S. Nav. M. Bull. **16**: 717 (April) 1922.

[8] Martin, W. L.: The Use of Mercurochrome-220 in Infected Wounds, U. S. Nav. M. Bull. **16**: 718 (April) 1922.

[9] Ockerblad, N. F.: Sterilizing the Seminal Vesicles with Mercurochrome 220, J. Missouri State M. A. **17**: 421 (Oct.) 1920.

[10] Gray, G. A., and Meyer, B. I.: Diphtheria Carriers and Their Treatment with Mercurochrome-220, J. Infect. Dis. **28**: 323-326 (April) 1921.

[11] Bray, C. M.: Mercurochrome-220: Its Practical Application in General Practice, with Special Reference to Treatment of Empyema: Report of Cases, West Virginia M. J. **15**: 134-136 (Oct.) 1920.

[12] Swartz, E. O., and Davis, D. M.: Action of Mercurochrome-220 on the Gonococcus, J. A. M. A. **76**: 844-846 (March 26) 1921.

[13] Guy, C. C.: Stomatitis Following the Injection of Mercurochrome-220 Soluble in a Tuberculous Sinus, J. A. M. A. **82**: 2119 (June 28) 1924.

[14] Bunten, J. C.: Salivation Due to Intravenous Use of Mercurochrome, J. A. M. A. **82**: 1443 (May 3) 1924.

[15] McKinnie, L. H., in a report before the joint meeting of the El Paso County and the Denver Sanatorium Societies in *November, 1924*, cited a case in which mercurochrome was being introduced into a tuberculous cavity and had to be discontinued because of the undesirable consequences.

[16] De Witt, L. M.: Action of Mercurochrome-220 and Mercurophen: A Preliminary Report of Effects on the Human Tubercle Bacillus and on Experimental Tuberculosis in Guinea-Pigs, J. A. M. A. **75**: 1422-1423 (Nov. 20) 1920.

[17] Rolnick, H. C.: Experimental Studies on the Vas Deferens: Effect of Antiseptics, J. Urol. **12**: 445-77 (Nov.) 1924.

definite occlusion as a result of scar tissue formation was noted. The findings varied from the filling up of the lumen with mercurochrome and detritus, and destruction of epithelium to complete occlusion.

Preparatory to a study on the effect of mercurochrome on local and general tuberculosis in rabbits, in elaboration on De Witt's work in guinea-pigs, the study reported here was made on dogs to determine the actual tissue toxicity of mercurochrome and the pathologic changes incident thereto. Mercurochrome was found to be less toxic by intravenous administration to dogs than to rabbits by Young and his co-workers, and the former was therefore taken as the animal of choice. Injections of different strengths from 2 to 0.01 per cent. mercurochrome-220 soluble (Hynson, Westcott and Dunning) was given intracutaneously, intratracheally and into the pleura.

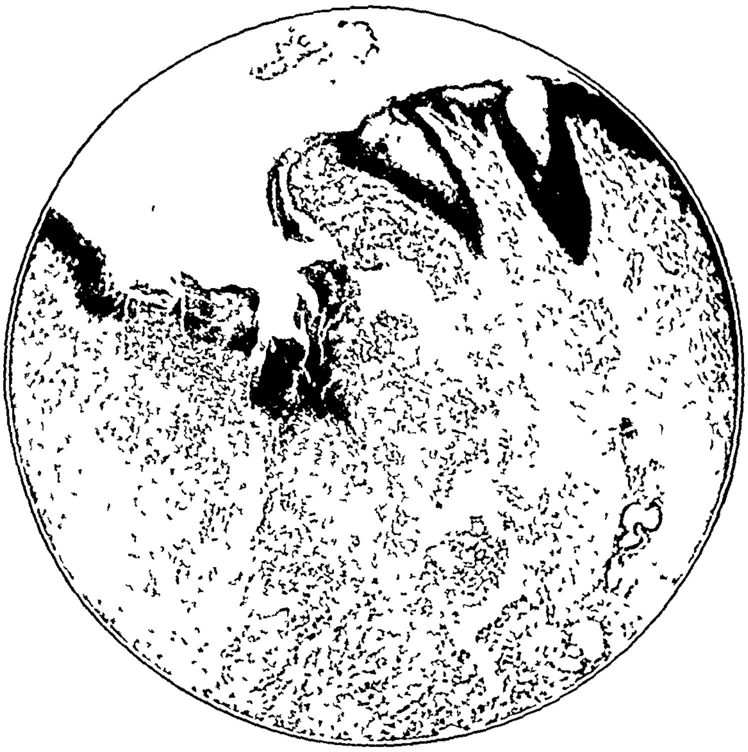

Fig 3.—Skin ulcer resulting twelve days after the intracutaneous injection of 0 2 c.c. of 0 5 per cent mercurochrome

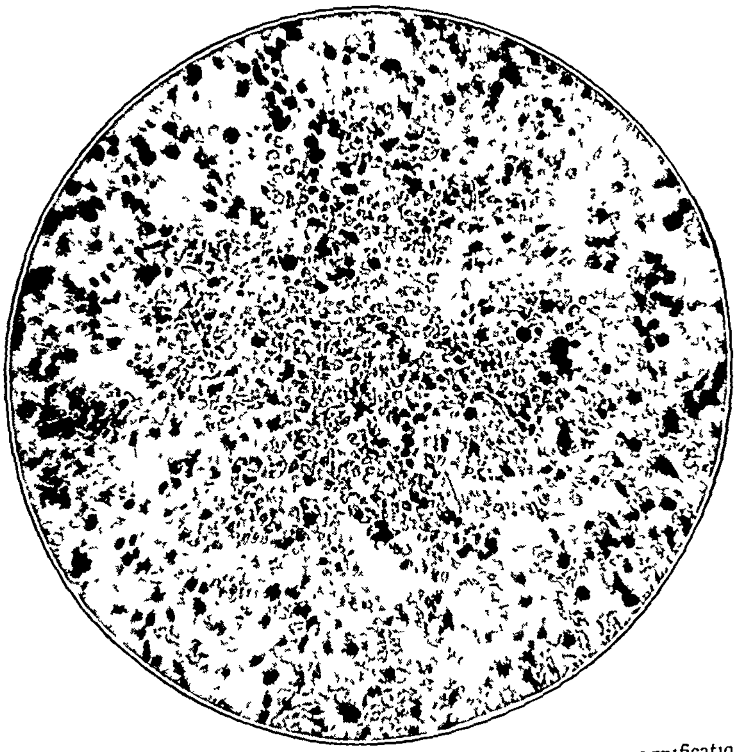

Fig 4.—Appearance of the lung under high power magnification, twenty two hours after the intratracheal injection of 2 5 c c of 2 per cent mercurochrome solution, marked hemorrhage, with absence of parenchymal architecture

EFFECT OF THE INTRACUTANEOUS INJECTION OF MERCUROCHROME

In Experiment 1, four dogs were given intracutaneous injections of 0.2 c.c. of 2, 1 and 0.5 per cent. mercurochrome solution, respectively, beginning with the high concentration craniad in duplicate on each side of the cleanly shaved skin of the abdominal wall, a total of six injections for each dog. The findings were recorded for about one month with the following results:

The 2 per cent solution produced within twenty-four hours an orange mercurochrome colored skin on an average of from 1 to 1 5 cm in diameter, surrounded by a purple, hyperemic, slightly edemic border, which became less pronounced after three days, while the edema became more pronounced The mercurochrome color persisted until about the fourth to the seventh day, when ulceration occurred with sloughing of the involved skin area, leaving a dark pink mercurochrome stained floor of the ulcer with undermined edges After the twelfth day the entire mercurochrome stained débris had been discharged, and there remained a granulation tissue, which slowly healed in from three to five weeks

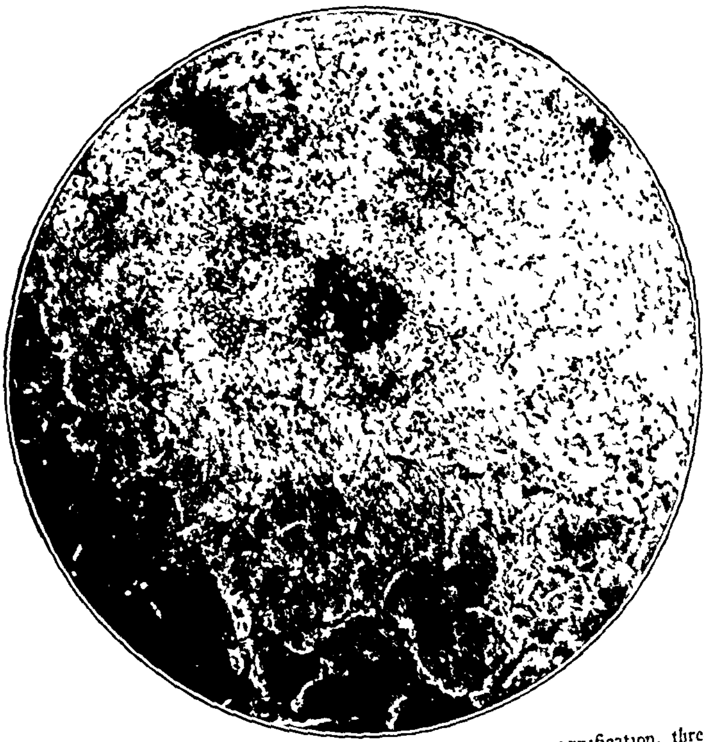

Fig. 5.—Appearance of the lung under low power magnification, three days after the intratracheal injection of 5 c.c of 2 per cent mercurochrome marked parenchymal hemorrhage around an early focal abscess, with absence of pulmonary detail

The 1 per cent. solution produced a lesion almost identical to that of the 2 per cent. solution, except that its size and that of the resultant ulcer was not quite so large The 0 5 per cent solution also produced a deep mercurochrome colored center, after twenty-four hours, with an edematous, swollen border. The lesion was a little less than 1 cm in diameter and sloughed after about the seventh day, when there resulted an ulcer with a very faint pink (mercurochrome) colored floor and undermined edges The mercurochrome stained débris discharged, and there remained a granulation tissue floor, which healed after from three to four weeks.

In Experiment 2, four dogs were given intracutaneous injections of 0 2 c.c of 0.1, 0.05 and 0.01 per cent. mercurochrome solution in the same manner as in Experiment 1, with the following results:

The 0 1 and 0 05 per cent solutions produced a slight pink tint of the skin, and a small area of edema and induration about 3 to 4 mm. in diameter, which persisted for about three to seven days without ulceration occurring, after which resorption occurred. The 0.01 per cent. concentrations produced no perceptible lesion in the skin.

EFFECT OF THE INTRATRACHEAL INJECTION OF MERCUROCHROME

In order to determine the effect of mercurochrome on the lung, a series of twenty-one dogs was given intratracheal injections of mercurochrome in concentrations of from 0.01 to 2 per cent, during light ether anesthesia and with the head of the animal slightly elevated to aid aspiration of the solution into the lungs.[18] The injections were given directly into the trachea by means of a syringe and a long 20-gage needle, after a preliminary incision in the neck, anteriorly, had been made to expose the trachea. Twenty-one dogs were used in this experiment, five of them receiving an intratracheal injection of either 2.5 or 5 c.c. of 2 per cent. mercurochrome solution; five receiving either 2.5 or 5 c.c. of 1 per cent.; three receiving 5 c.c. of 0.5 per cent.; three, 5 c.c. of 0.1 per cent.; three, 5 c.c. of 0.01 per cent., and two, as controls, receiving 10 c.c. of sterile physiologic sodium chlorid solution. The findings, briefly summarized for some of the animals taken as typical examples, are recorded in Table 1.

Mercurochrome-220 soluble introduced into the lungs of dogs by intratracheal injection produces distinct pathologic changes, which persisted for as long as four days, in concentrations as low as 0.1 per cent. The pathologic changes produced ranged from a mild edematous and desquamative alveolitis in the lower concentrations to a pronounced acute hemorrhagic pneumonia with focal abscess formation and tissue necrosis in the higher (1 and 2 per cent.) concentrations. Resolution may occur as in acute lobar pneumonia, or there may result a proliferative pneumonitis with granulation and scar tissue formation. The mercurochrome seemed to exert in vivo a preservative effect, especially on the erythrocytes, as is evidenced by their slow disintegration in the affected areas.

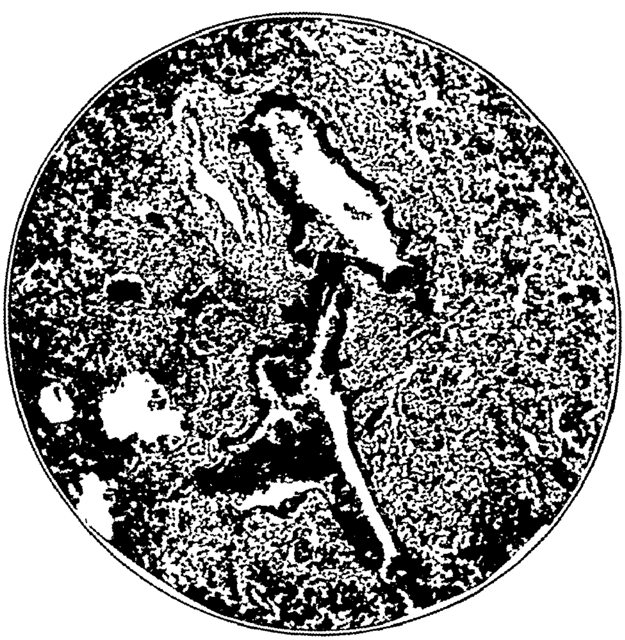

Fig. 6.—Appearance of the lung under low power magnification, twenty-two days after the intratracheal injection of 5 c.c. of 1 per cent. mercurochrome solution: granulation tissue repair, with discharge of cellular detritus in bronchus following resolution.

EFFECT OF THE INTRAPLEURAL INJECTION OF MERCUROCHROME

In view of the fact that mercurochrome has been tried clinically by intrapleural injection, it seemed advisable to determine its effect experimentally on the normal pleura and the contiguous lung parenchyma. Since the foregoing studies were made on dogs, it seemed desirable to continue using these animals for the intrapleural studies, in spite of the anatomic unity of the pleural cavities, or the tenuity and diaphanous nature of the septal veil in this animal making the ready passage of gas and liquids from one side to the other possible.[19]

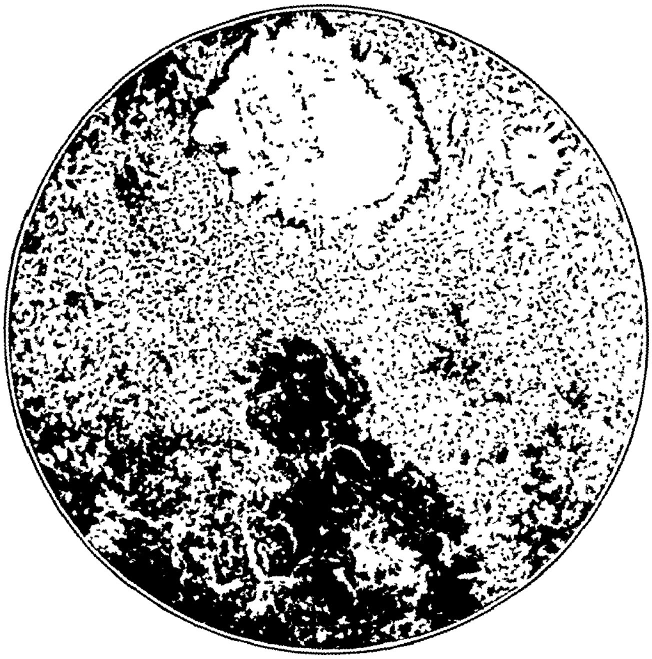

Fig. 7.—Appearance of the lung under low power magnification, three days after the intratracheal injection of 5 c.c. of 0.5 per cent. mercurochrome solution: marked pulmonary parenchymal changes, without appreciable effect on the bronchioles.

A series of eight dogs was given right side intrapleural injections of mercurochrome,[20] two of them receiving 5 c.c. of 2 per cent. solution; two, 5 c.c. of 1 per cent. solution; two, 10 c.c. of 0.5 per cent. solution, and two, 10 c.c. 0.1 per cent. solution. No anesthetic was used, but the injections were given using aseptic precautions. The results are briefly recorded in Table 2, in which are included a few representative animals in the various dilutions.

In dogs, mercurochrome-220 soluble by intrapleural injection produces distinct pathologic changes in concentrations as low as 0.1 per cent. In the lower concentrations (0.1 per cent), there results a transient dry fibrinous pleurisy, while in the higher concentrations (dilutions of from 0.5 to 2.0 per cent.), there occur hemorrhagic pleural exudates and acute hemorrhagic pneumonia, resembling that occurring after the intratracheal injection of like solutions of mercurochrome.

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[18] Corper, H. J.: Pulmonary Aspiration of Particulate Matter, Normally and During Anesthesia, J. A. M. A. 78: 1858-1862 (June 17) 1922. Corper, H. J., and Robin, H. A.: The Pulmonary Aspiration of Particulate matter, Am. Rev. Tuberc. 6: 813-850 (Nov.) 1922. Corper, H. J.: Ibid 8: 386-392 (Dec.) 1923.

[19] Matas, Rudolph: Remarks on the So-Called Mediastinal Septum of the Dog, in Relation to the Pneumothorax Problem in Man, Arch. Surg. 8: 336-344 (Jan.) 1924. Graham, E. A.: A Reconsideration of the Question of the Effects of an Open Pneumothorax, ibid. 8: 345-356 (Jan.) 1924. Snyder, J. W.: Studies in Intrapleural Tension, ibid. 8: 364-386 (Jan.) 1924.

[20] All solutions of mercurochrome used in the experiments reported herein were prepared the day they were used, from a fresh 2 per cent. mercurochrome solution, in distilled water, and brought to a gentle boil for a few moments.

COMMENT AND CONCLUSIONS

Mercurochrome-220 soluble, from 0.5 to 2 per cent solution, injected subcutaneously, intratracheally and into the pleural cavity of the dog produces profound pathologic tissue changes, which, in the lungs, result in permanent parenchymal damage initiated as an acute hemorrhagic pneumonitis with focal abscesses, and terminating in tissue destruction and resultant proliferative pneumonitis. Intrapleural injections, in addition to producing a marked hemorrhagic pleuritis, result in pulmonary injury resembling that following the intratracheal administration. Intracutaneous injections result in ulcer formation in concentrations down to 0.5 per cent. Recognizing the ready aspiration of fluids from the trachea into the terminal respiratory divisions (alveoli) of the lungs, it would seem inadvisable to treat pulmonary conditions, and especially tuberculous cavities, by means of injections of mercurochrome. Likewise, the treatment of empyemas, either acute or tuberculous, by means of mercurochrome in concentrations exceeding 0.1 per cent. is advised against, not only on account of the action of the drug on the pleura, but also because of its coincident pulmonary effect, which occurs following the intrapleural administration of the mercurochrome. In the dog, this was evident also in the contralateral lung, probably because of the unity of the pleural spaces, or as a result of rapid diffusion of the drug through the mediastinum in this animal, as pointed out by Graham and Snyder, which possibility may exist for man, although apparently to less extent.

In view of the foregoing findings, it seems well again to warn against the general clinical use of any new drug without sufficient preliminary animal study, in all the conditions under consideration, to determine its pathologic effect.

TABLE 2.—*The Effect of the Intrapleural Injection of Mercurochrome-220 Soluble*

* Solution • Injected		Time Interval, Days	Brief Findings	
Amount, C.c.	Per Cent.		Gross	Microscopic
5	2	3	Hemorrhagic pleural effusion (right, 35 c.c.; left, 30 c.c.) with fibrinous bands, and pulmonary congestion and consolidation	Hemorrhagic* and proliferative pneumonia, with fibrinous pleuritis
5	1	1	Hemorrhagic pleural effusion (right, 22 c.c.; left, 19 c.c.); pulmonary consolidation and fibrinous pleural strands	Hemorrhagic alveolar exudation and acute desquamtive and fibrinous pleurisy
5	1	6	Dry fibrinous pleurisy, with pulmonary consolidation	Hemorrhagic and proliferative pneumonitis, with fibrinous pleurisy
10	5	3	Hemorrhagic pleural effusion (right, 32 c.c.; left, 30 c.c.)† numerous fibrinous adhesions, with acute hemorrhagic pneumonia	Hemorrhagic pneumonia of both lungs, with acute pleuritis
10	0.1	1	Dry fibrinous pleurisy.....	Mild serofibrinous pneumonia

* In practically all the dogs injected, pulmonary changes were found on both the right and left sides.

† The pleural fluid on the right side contained 280,000 erythrocytes and 6,300 leukocytes per cubic millimeter, while on the left side it contained 35,000 erythrocytes and 2,600 leukocytes.

ABSTRACT OF DISCUSSION

DR. JOHN A. KOLMER, Philadelphia: In chemotherapeutic research, more attention should be paid to what has been designated as chemopathology. Merely to determine the toxicity of a drug for the healthy lower animal, according to the maximum amount that it can stand per gram of body weight for an arbitrary period, is not sufficient, because a compound well borne, so far as duration of life is concerned, might be objectionable from the standpoint of pathologic tissue changes, and especially in the organs of elimination. Dr. Corper did not touch on the pathologic changes induced by the intravenous administration of mercurochrome, so that we need not discuss this phase of the problem any further. So far as the local effects of mercurochrome are concerned, the ideal antiseptic for the local disinfection of the tissues should be without demonstrable irritation in a bactericidal concentration. On the other hand, for the treatment of chronic bacterial infections of a superficial nature, the ideal chemical agent should possess what is known as a dynamogenic effect; that is, the ability to stimulate fibrosis with the effort to wall off the bacterial infection. Coming to the more practical phases of the work, we are not particularly interested in the results accruing from the intracutaneous administration of mercurochrome. This does have a practical bearing on what might happen in accidental perivascular infiltration during the intravenous administration of this compound. It is to be expected that a compound containing the mercury that mercurochrome does might produce a considerable degree of local irritation, as was brought out in Dr. Corper's experiment. However, when we approach the problem from the standpoint of intrapleural medication, Dr. Corper's experiments have a very practical bearing, because mercurochrome has been advocated for irrigation in the treatment of chronic empyema. I should like very much to have seen Dr. Corper interpret the results in terms of bactericidal concentration of the drug. It is highly probable that mercurochrome capable of producing these tissue changes when administered intrapleurally is bactericidal but yet not of such concentration as to produce histologic changes. In a broad, general way it can be stated that drugs injected intrapleurally are at least from ten to twenty times more toxic per gram of body weight than when they are administered intravenously. Unquestionably, something occurs that greatly reduces tolerance when a drug is administered by intrapleural injection. This is likewise true when it is injected intraspinally into the subarachnoid space. Here the tolerance is between ten and thirty times less than tolerance by intravenous injection, and all our work with the mercurials, including mercurochrome, has shown that as a class they may bring about histologic changes of the kind shown by Dr. Corper, in which hemorrhage would appear to

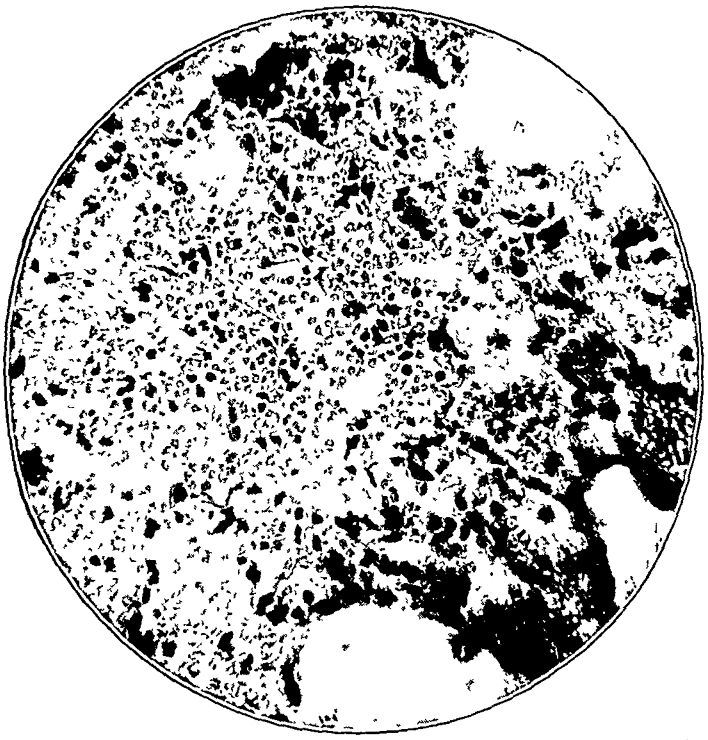

Fig. 8.—Appearance of the lung under high power magnification, four days after the intratracheal injection of 5 c.c. of 0.1 per cent. mercurochrome solution: alveolar hemorrhage and epithelial desquamation in milder reaction to mercurochrome.

be the predominating type of lesion. This occurs not only in the pleural cavity but likewise in the subarachnoid space. Dr. Corper's work is also of interest in view of recent possibilities opened up for the direct disinfection of tuberculous cavities, either through the introduction of the drug by means of the bronchoscope or from direct surgical attack of tuberculous cavities through the chest wall. I regard mercurochrome as being a valuable addition to our armamentarium for attacking bacterial infections.

Dr. G. D. Fussell, Clearfield, Pa.: Dr. Corper said nothing about the intravenous use of mercurochrome, or the effects following its intravenous use. We have used mercurochrome intravenously considerably in Clearfield. One case was of particular interest. A man who had had scarlet fever several years ago, and then had a severe nephritis, subsequently developed a blood stream infection, associated with an arthritis. When he came into the hospital, the urine was loaded with albumin. The blood urea was very high, about 55 mg. of urea nitrogen. He was desperately ill, and we felt that we would take a chance. He was given several intravenous injections of mercurochrome, and to our great delight, and somewhat to our surprise, the nephritis was not made worse; in fact, it was improved. He subsequently made a complete recovery from his blood stream infection. When seen a couple of weeks ago, he still had a small residual albuminuria, but he had just as much before his original infection and before his injections (and he had four of them) of mercurochrome. Another point in which I was very much interested is this: Surgeons have been in the habit of using mercurochrome rather promiscuously in the abdominal cavity, and I must confess that we have never seen any ill effects come of this intra-abdominal use in the presence of infection, but I am very curious to know really what did happen. I know that these people got well clinically if there was nothing else in the way of it, and they had no immediate signs of any extensive damage.

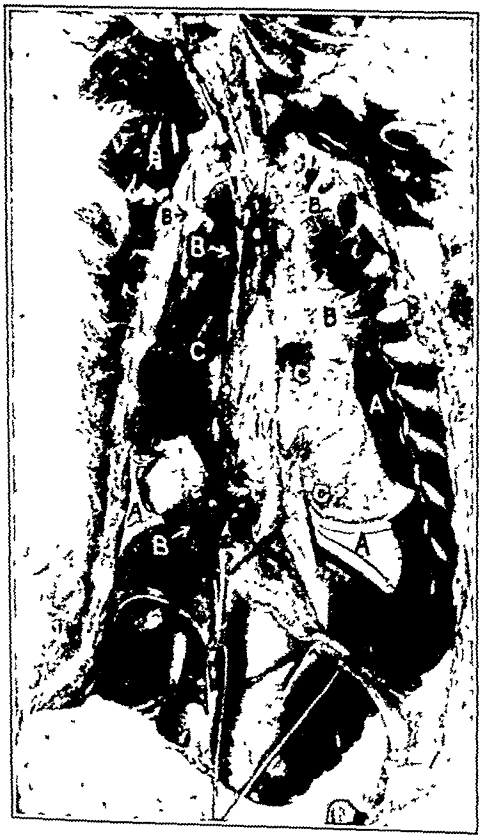

Fig 9 —Chest of dog three days after right intrapleural injection of 10 c c of 0 5 per cent mercurochrome solution: *A*, marked hemorrhagic pleural effusion, *B*, dense fibrin strands from lungs to chest wall; *C*, congested appearance of pendent (anterior) borders of the lungs.

Dr. E. C. White, Baltimore: Dr. Corper's paper brings to the fore very strikingly a danger that follows inherently the introduction of any new drug; that is, the originators will propose a few uses, or possibly one definite use, for the drug, and the profession at large will then use the drug promiscuously without controls. Mercurochrome was introduced originally for use in the genito-urinary tract. As one of those responsible for the introduction of the drug, I want to point out that none of us has ever advocated its use in the respiratory tract or accessory organs, and that those who have used the drug for this purpose must, of course, assume the full responsibility for any untoward effects that follow. I want also to correct a possible impression that one may gather from Dr. Corper's paper of the general tissue toxicity of mercurochrome because of this very marked destructive action in the respiratory tract. About three or four years ago a paper was read by Dr. Vincent J. O'Conor of Chicago in which he filled the kidneys of a dog with, I think, 1 or 2 per cent. mercurochrome, at least one of the very strong solutions. He left the drug in situ for some time, and then made pathologic sections of the kidney. The damage was minimal or did not occur at all. It illustrates the striking difference in toxicity of this drug as well as any other drug to different types of body tissue. Obviously, Dr Corper's work is important as sounding a warning against the promiscuous employment of mercurochrome in the respiratory tract, but it should not be interpreted as indicating any general tissue toxicity of the drug.

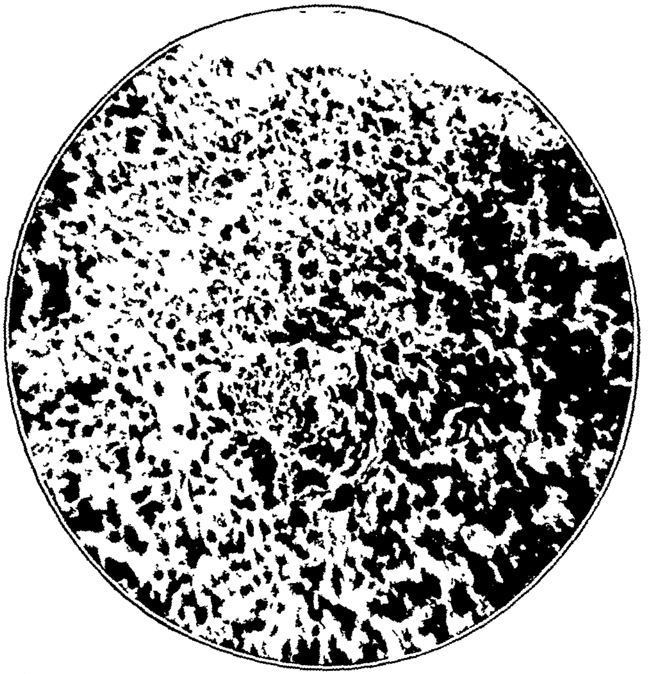

Fig 10.—Appearance of lung under high power magnification, three days after right intrapleural injection of 10 c.c. of 0 5 per cent. mercurochrome solution: marked hemorrhagic pneumonitis.

Dr H J. Corper, Denver: It is difficult in the short time allotted for the presentation of our papers to present all the practical points that may be deduced from a study of this nature. I rarely disagree with Dr. Kolmer, but the practical application of the intracutaneous tests was emphasized to me when one of my Denver colleagues told me that he was going to receive injections of mercurochrome directly into multiple subcutaneous abscesses of the hands, and we were able to advise him against the use of concentrations of 0.5 per cent. or over. If the physician is aware of the tissue destructive action of a drug, he is better able to apply it judiciously, and if he exceeds its limitations, he need not be surprised at the untoward effects resulting. The enthusiastic reports from other fields of medicine encouraged us to try mercurochrome in tuberculosis and, in brief, it was found to be of no value in this disease in experimental animals whether by local or general (intravenous) administration Regarding its intravenous use for acute infections, I can only refer to studies by others, and here might point out that Hirschfelder, Malmgren and Creary recently reported that following the intravenous injection of mercurochrome the edema fluid of paraphenylendiamin-treated rabbits is not bactericidal or bacteriostatic for *B. coli* or the staphylococcus, yet it appears to be a perfectly good urinary tract antiseptic, as pointed out by Young and his colleagues. Frankly speaking, I could not understand why the local effects of mercurochrome, a drug now six years old, has not been previously studied exhaustively in the experimental animal. In reply to Dr. Fussell's question about noting ill effects in the patient, I regret to say that the clinician reserves this for the postmortem table. Unless a patient becomes violently ill or dies, it is taken for granted that no harm has been done, while the animal can be studied at any interval and destructive tissue changes noted accurately. Many of the animals presented no general effects from the local administration of the mercurochrome, yet the local changes were in many cases profound. This speaks strongly in favor of an exhaustive test of all new drugs in animals before their application to man.

RADIOTHERAPY IN THE TREATMENT OF TUBERCULOUS CERVICAL ADENITIS *

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AND
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The place of radiotherapy in the treatment of cervical and axillary adenitis has not been finally determined. A study of the literature reveals that many believe that the roentgen ray should replace surgery in the treatment of this disease, while others maintain that surgery is still the method of choice. Hanford,[1] in a recent study of more than 300 cases, concludes that operation is indicated in a considerable proportion of cases, while, on the other hand, the results with conservative treatment are so good that only those radical operations are indicated which are relatively easy and devoid of nerve and vein damage. In a group of 141 patients treated by him with relatively frequent small doses of filtered roentgen ray, 70 per cent. showed either apparent cure or such marked improvement as to justify conservative treatment. Dowd's[2] studies of end-results in a large series of cases in which operations were performed showed 91 per cent. of cures in patients in whom the disease was limited to the upper cervical lymphatics—results that would be hard to surpass.

This study, based on the results of roentgen-ray therapy in a series of twenty-one patients treated by one of us (J. G. H.) at St. Luke's Hospital, is made from the point of view of the relative indications for surgery and the roentgen ray. Most of the patients have been personally examined; in a few, report has been from the family physician, from the follow-up nurse or by letter from the patient. The period of observation has been from nine months to four years, averaging two years. Half the patients were under 16, the ages varying from 17 months to 31 years.

In only one of these cases was the diagnosis proved by biopsy; in another, nodes removed at a previous operation were known to be tuberculous. In the remainder, the diagnosis was clinical. While this may mean error in individual cases, on the whole error must be slight, as chronic cervical adenitis is, in the great majority of cases, tuberculous. One case of chronic axillary adenitis is included in the series.

In twelve of the twenty-one cases, the end-result is satisfactory, a clinical cure or small fibrotic nodes only, remaining. Of the remainder, six patients showed marked improvement, although nodules remain which may give further trouble. Two patients showed only slight improvement, and one died of unknown cause. The series is too small to include all types of cervical gland tuberculosis, but for convenience in discussion, it may be divided into three groups:

1. Cases with limited involvement, for the most part early. This includes those most favorable for operative treatment.
2. Cases with scattered nodes with or without small abscess formation. This group is less favorable for operative excision. It is the largest of the three groups.
3. Cases with large abscess formation or otherwise too extensive to be treated by radical surgery.

Of our patients, only five fell into the first group. As cases apparently favorable for operative treatment, they are presented more in detail.

Table 1.—*Group 1*

Case	Name	Age	Sex*	Examination	Duration	No. of Treatments	Duration of Treatments	Relapse	Duration of Observation	Result
1	L. C.	17 mo.	♀	Small, discrete mass in left neck; healed sinus	4 mo.	5	2 mo.	....	2 yr.	Satisfactory; fibrotic nodule
2	E. Z.	7 yr.	♂	Discrete mass, 3 cm. in diameter; right upper cervical lymphatics	4 wk.	8 14	6 mo. 7 mo.	Yes	2 yr.	Satisfactory; fibrotic nodules; required drainage in hospital from 1 to 2 months after starting treatment
3	N. C.	10 yr.	♀	Discrete mass in right axilla, 4 by 2 cm.	3 mo.	19 2 subsequent radium applications	2 yr.	....	3 yr.	Improved; 2 fibrotic nodes remain
4	J. J.	22 yr	♀	Discrete mass, 4 by 3 cm., in left upper cervical lymphatics; previous operation	3 wk.	6	3 mo.	....	2¼ yr.	Satisfactory
5	J. O.	20 yr	♀	Mass, 6 by 3 cm., in lower part of posterior triangle, right neck; pus aspirated before starting radiotherapy	1½ yr.	7	3 mo.	Yes	2 yr.	Satisfactory; fibrotic nodule, 1 by 0.5 cm., remains; after stopping treatment, an abscess in upper part of same posterior triangle drained at another hospital

* In the tables, ♂ indicates male; and ♀, female.

Case 1.—L. C., a girl, aged 17 months, had a mass in the neck, from 1 to 2 cm. in diameter, of four months' duration. She received five fractional treatments over a period of two months. Examined at the end of two years, the result was satisfactory with only a fibrotic nodule remaining.

Case 2.—E. Z., a boy, aged 7 years, had a mass behind the angle of the jaw, about 3 cm. in diameter, of four weeks' duration. From one to two months after starting treatment, an abscess was evident, and it was drained. He received eight fractional exposures over six months and was apparently well for some time, but returned six months later with a node 1.5 cm.

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* From the Department of Surgery and of Radiotherapy, St. Luke's Hospital.

[1] Hanford, J. M.: The Indications for Operation in the Treatment of Tuberculous Cervical Lymph Glands, Ann. Surg. **80**: 885-897 (Dec.) 1924.

[2] Dowd, C. N.: Tuberculosis of the Cervical Lymphatics, J. A. M. A. **67**: 499-503 (Aug. 12) 1916.

in diameter. This also broke down. He received a second course of fourteen fractional treatments over the next seven months. At the end of two years from the beginning of treatment, and not quite six months from the end of it, two or three little pea-sized nodules could be felt under the scar. He was considered cured.

CASE 3.—N. C., a girl, aged 10 years, had a mass in the axilla about 4 by 2 cm., of four months' duration. Over a period of two years, she had fifteen fractional and four full treatments, followed by two radium applications. At the end of this time, two small masses about a centimeter in diameter remained. During the third year, there was no treatment, and the condition did not change. This is not considered a satisfactory result.

TABLE 2.—*Group 2*

Case	Name	Age	Sex	Examination	Duration	No. of Treatments	Duration of Treatments	Relapse	Duration of Observation	Result
6	M. R	26 yr.	♀	Scattered nodes with abscess in left neck; previous excision, recent drainage	Since infancy	7	5 mo.	Yes	2 yr.	Unsatisfactory; good-sized scattered nodes remain
7	F. M.	33 yr.	♀	6 or 8 small scattered nodes, left neck	5 yr.	7	2 mo.	....	1½ yr.	Satisfactory
8	T. O'N.	18 yr.	♀	Small, scattered nodes, one of 3 cm. diameter, in left neck	11 yr.	6	7 mo.	....	2 yr.	Satisfactory; fibrotic nodule
9	C. B.	9 yr.	♀	Scattered nodes in right neck, largest 2 cm. in diameter, one broken down; recently had had drainage	1 yr.	13	6 mo.	....	1 yr.	Satisfactory; fibrotic nodule; keloid at site of aspiration; cure completed by summer at seashore
10	E. D.	12 yr.	♂	Scattered nodes, both sides, with some breaking down	3 yr.	9 12 6	8 mo. 6 mo. 3 mo.	Yes	4 yr.	Fibrous mass both sides of neck, on right side 2 cm.; some scarring; not wholly satisfactory
11	J. H.	14 yr.	♀	Numerous small scattered nodes, both sides	"Years"	9	2 mo.	Yes	1 yr.	Much improved
12	G. H.	27 yr.	♀	Scattered nodes, both sides, with sinus and abscess; previous operation	20 yr.	12 23 20	8 mo. 10 mo. 12 mo.	Yes	3 yr.	Much improved
13	J. F.	5 yr.	♂	Scattered nodes, largest 2 cm. in diameter, both sides of neck	3 yr.	7	5 mo.	....	2 yr.	Reported cured by family physician; satisfactory
14	H. B.	8 yr.	♂	Scattered nodes, both sides of neck..	?	10	6 mo.	....	2 yr.	Reported cured by family physician; satisfactory

CASE 4.—J. J., a woman, aged 22, had a mass in the upper left cervical region for three weeks. Four years previously, she had had a bilateral adenectomy. She received four fractional and two full exposures over a period of three months. Examined at the end of two years, she was completely cured.

CASE 5.—J. C., a woman, aged 20, had a nontender, nonadherent mass in the right lower posterior triangle of the neck of one and a half years' duration. Before treatment was instituted some weeks later, there was fluctuation, and pus was aspirated. During the next three months, she received seven treatments, at the end of which time only a hard scar remained. Three months later, she returned with a hard node 3 cm. in diameter and received one massive treatment. Examined at the end of two years from the time of beginning treatment, a flattened remnant 1 by 1.5 cm. was felt at the site of the former mass. In the interim, an abscess had formed above the first and had been drained at another hospital. A gland 1 cm. long could be felt at this site. The result was considered satisfactory

TABLE 3.—*Group 3*

Case	Name	Age	Sex	Examination	Duration	No. of Treatments	Duration of Treatments	Relapse	Duration of Observation	Result
15	A. G. col.	22 yr.	♀	Mass, 7 by 3 cm., left neck, broken down in center	?	10	3½ mo.	....	9 mo.	Inflammatory mass smaller but of good size; sinus in center; did not stick to treatment; unsatisfactory
16	M. C.	28 yr.	♀	Abscess of large size, left neck; pus evacuated, leaving a mass 6 by 4 cm.	3 mo.	18	4½ mo.	....	2 yr.	Reports cure by letter; satisfactory
17	C. S. col.	18 yr.	♀	Large abscess, left neck............	?	10	5 mo.	....	.....	Died over a year later, cause unknown; had syphilis; unsatisfactory
18	J. Z.	16 yr.	♂	Abscess, 6 by 4 cm., right neck; incised before irradiated	3 mo.	4 4	2 mo. 4 mo.	Yes	3 yr.	Satisfactory
19	L. R.	15 mo.	♀	Large abscess, right, with 2 sinuses; few scattered nodes left	6 mo.	12 15 radium	9 mo. 12 mo.	Yes	2 yr.	Much improved
20	L. B.	31 yr.	♀	Large confluent mass glands, right neck; lupus, right cheek, of year's duration	10 wk.	31	1 yr.	....	2 yr.	Lupus cured by Kromayer lamp; mass of nodes, 4 cm. in diameter, remain; improved, but not satisfactory
21	H. T. col.	18 yr.	♂	Collar of glands and ulcerations of skin from ear to ear	?	?	6 mo.	....	4 yr.	Scars, but no glands or ulcerations left; remarkable cure

Four of these five cases give satisfactory results. In the case of axillary adenitis, it would undoubtedly have been better to operate. In the two cases in which there was abscess formation, evacuation of the pus was certainly an important part of the treatment. The roentgen ray probably contributed to the breaking down in one of these. The other two patients, both of whom should have been easy operative cures, responded promptly and satisfactorily to the roentgen ray.

Group 2 includes nine of our cases. These presented scattered nodes, and four in addition had small abscesses. From a surgical standpoint, radical removal was considered inadvisable. A striking feature in this group is the length of time the patients had had the disease, varying in the reports from one to twenty years. The time of observation was from one to four years.

The results of roentgen-ray therapy were satisfactory in five of the nine cases. One patient considered himself cured, but had fibrous masses sufficiently marked to exclude him from the group called satisfactory. Two are much improved, but not completely cured. One of them was considered as cured when these statistics were first collected, but soon after required another treatment. The fourth, a woman under suspicion of pulmonary tuberculosis, showed temporary reduction of the size of the nodes, but when last examined they were again much enlarged. Two patients required a long course of the roentgen ray, and four relapsed during the period of observation necessitating renewal of the treatment. If the roentgen ray had been unavailable, most of them would have been treated conservatively. That the results would have been as good under the conditions in which most of them live seems to us improbable.

The third group consists of cases in which the character of the involvement was such that a dissection was impossible. Of the seven patients, five had large abscesses. In two of these five cases, the results were classed as satisfactory and in a third as much improved. In one of the successful cases, the patient relapsed after the first course of treatment and required further radiation. After the second course, he has remained entirely well for more than two years.

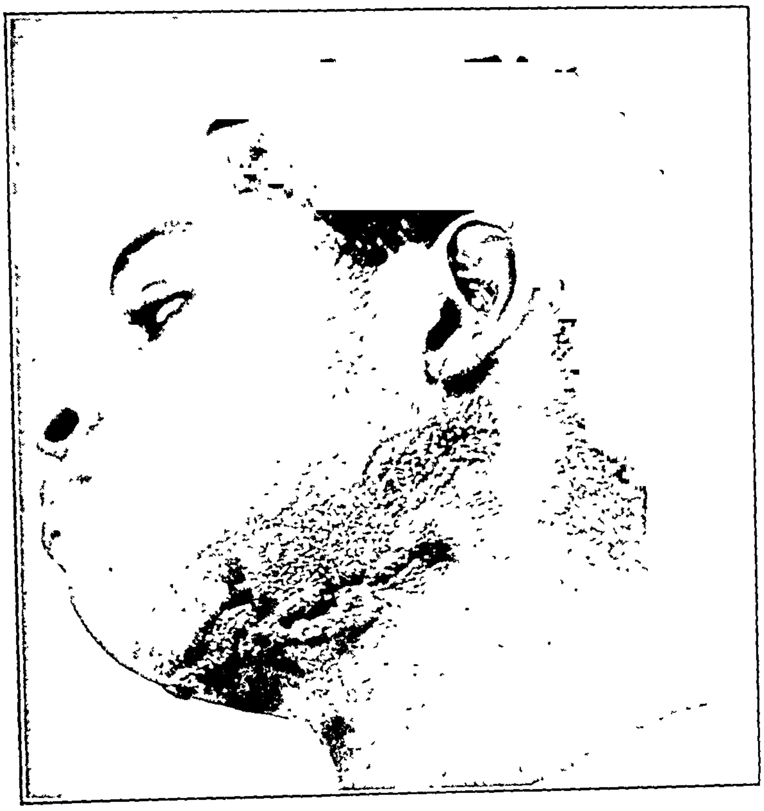
Fig. 1.—Side of neck before treatment.

In two of the abscess cases, the results were unsatisfactory. One patient, a young colored woman who had syphilis, came for treatment irregularly for five months without marked improvement. She died later from an unknown cause. The other, a colored man of 22, was treated for three and a half months and then discontinued treatment. On examination at the end of nine months, there was improvement, but a matted mass of glands with a sinus remained.

We have included in this group two cases of very different character because the subjects were unsuitable for operation. One, a woman of 31, had an old lupus erythematosus on the right cheek. In the right side of the neck, she presented a large confluent mass of nodes with considerable periadenitis. A node removed for section proved tuberculous. A radical excision would have meant an extremely difficult and extensive dissection. She was treated for a year with twenty-nine fractional and two full exposures. Examined at the end of two years, she still had a mass of nodes about 4 cm. in diameter. This presents a failure from the standpoint of cure, although the condition was markedly improved. It is possible that further irradiation would complete the cure; on the other hand, the case had become one favorable for operative excision.

The last patient, a colored boy, aged 18, furnished a triumph for radiotherapy. He had a mass of glands and ulcerations of the skin, extending around the neck from ear to ear (Fig. 1). Operation was absolutely impossible. He was treated for six months. Examined at the end of four years, there were scars but not a trace of active disease (Fig. 2).

As a basis of comparison, nine patients operated on by one of us (M. K. S.) for tuberculous cervical adenitis, on whom it was possible to make follow-up examinations, are included. These were, for the most part, early favorable cases, although in at least one, the dissection was extensive. Seven had excellent results, although in one, a nodule can be felt. The eighth has recently returned with a gland 2 cm. in diameter adjacent to the scar. The ninth, a young woman who had both cervical and axillary glands, and who had had a previous adenectomy, died a year later of pulmonary tuberculosis.

SUMMARY

The object of our study of these cases was to estimate the value of roentgent-ray therapy as compared with excision in treatment of tuberculous adenitis. Surgical experience, as expressed in such reports as that of Dowd, has shown that in early cases with a localized mass of involved nodes, excision gives a high percentage of cures. In such cases, permanent cure by the roentgen ray is frequently, possible, but seems less certain. The possibility that large firm nodes will break down under roentgen-ray treatment must be considered. In choosing the method of treatment for such an individual case, the uncertainty and tediousness of radiotherapy must we weighed against the operative risk and resultant scar after surgical procedure. There are, however, other cases (three fourths of our series), in which complete excision is impractical or impossible, many of which can be definitely cured by the roentgen ray. It is not always a question of choice between surgery and radiotherapy, as incision and aspiration are surgical procedures indispensable to success in many cases in which the roentgen ray is used. Both surgery and roentgen-ray therapy have important places in the treatment of tuberculous adenitis.

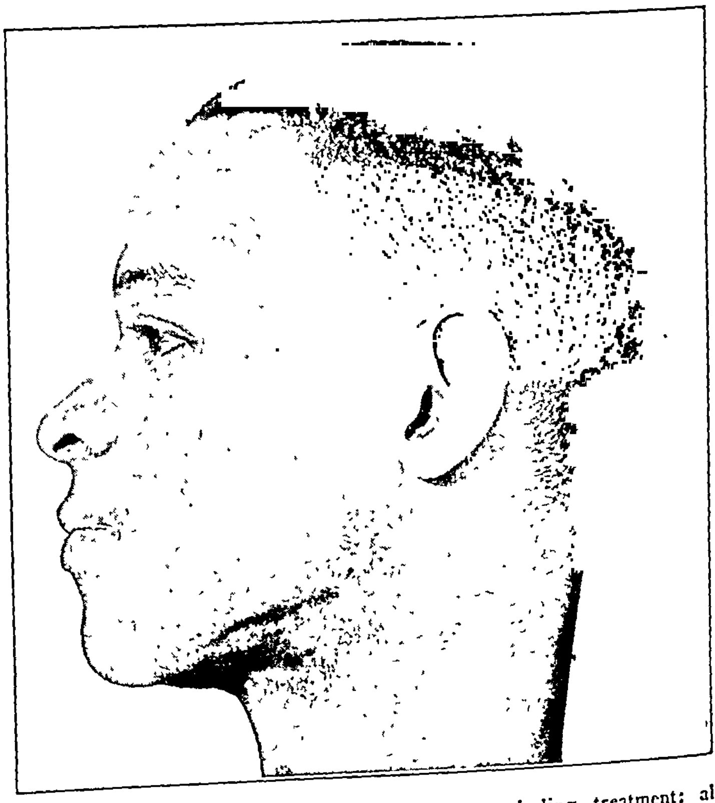
Fig. 2.—Three and one-half years after concluding treatment: all ulcerations healed; glands no longer palpable.

33 East Sixty-Eight Street—40 East Eighty-Third Street.

Clinical Notes, Suggestions and New Instruments

CALCIFIED BRAIN TUMOR

GEORGE M. CRABB, M.D., MASON CITY, IOWA

The following history presents a case that I believe is very unusual in medical literature. If any similar cases have been reported, I have been unable to find them.

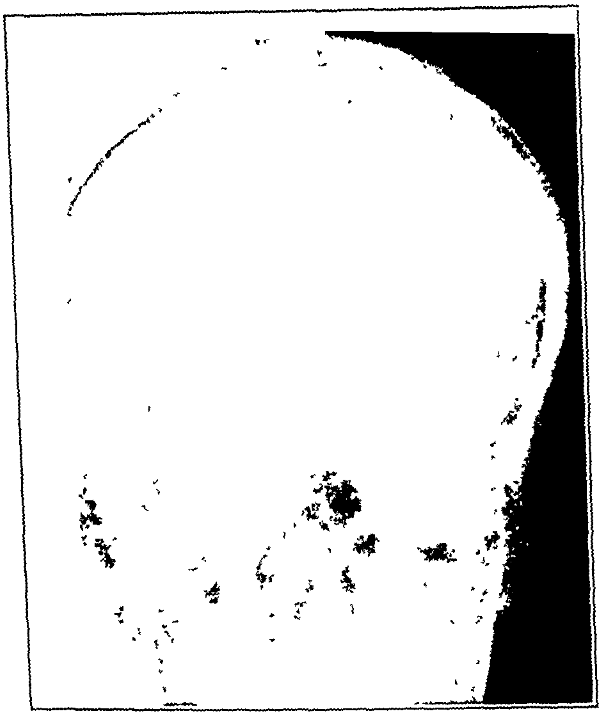

Fig. 1.—Anteroposterior view of tumor.

Heuer and Dandy[1] report from the foreign literature seven cases of calcification within the brain, consisting of calcification of pineal glands and calcification of the cyst walls. They add six cases of their own in which partial calcification of brain tumors or cyst walls cast shadows on the roentgenograms. Miller of Denver,[2] and Lynn-Thomas[3] of England, each report a case of intercranial calcification. Miller's case was that of three small calculi in the brain substance, and Lynn-Thomas' case was a calcified epithelioma in the left ventricle. In both of these cases, epileptic seizures were prominent and persistent symptoms. Both patients were operated on and made complete recovery.

There are many other references in the literature to cases in which calcified patches in cyst walls, calcification of cerebral vessels and calcification of pineal gland tumors have been diagnosed by the use of the roentgen ray.

The case that I am reporting differed from any of those that I have found in literature, in that the tumor was spherical and wholly within the brain substance, and the calcium shell completely surrounded the cyst cavity. It was situated in the left frontal lobe, and was many times the size of any of the calcified tumors that have been reported heretofore.

REPORT OF CASE

History.—A boy, aged 13, who came to the Park Hospital Clinic, Nov. 1, 1924, complained chiefly of periodic convulsions occurring about once a month. He was somewhat restless, but answered questions well. His father, mother, brothers and sisters were living and well. There was no history of epilepsy in the family. When the boy was 4 years of age, he was climbing about a new building and fell, striking his head on a radiator, and falling from there to the cement floor. He was not unconscious at the time, and was taken home, apparently no worse for the injury. The injury occurred in August. The following September his parents noticed a period when he could not speak. His mother found him shaking as if in a chill, and this lasted for five or six hours. His speech gradually returned; he was able to mumble at first, but finally speech again became normal. One month later he had a similar attack, during which time consciousness was lost for about one minute. Following this attack, he had a paralysis of the right arm and leg, which continued for the next twenty-four hours. This gradually improved, and he was able to move his arms and legs normally. About one month following this attack he was sick again; he had a paralysis of the entire right side, and was in bed for many weeks. At this time he was seen by several physicians, who advised his parents that he had a serious brain lesion, and probably would not recover. He remained in this condition for many weeks, and he received various kinds of treatments. The paralysis continued until the next May, when the father noticed that the hand began to move again; and within one year from the onset, complete function was restored, and he was able to walk and play. At the end of about thirteen months, he was apparently well, but they noted that he was left handed, while before the sickness he had been right handed.

For a period of seven or eight years, he was apparently well, except that they noted that he was somewhat slow at school, although they thought that his memory was exceptionally good. He found arithmetic and other studies very difficult. He was in the fourth grade at school, which was about three years behind the normal for a child of his age.

July 4, 1923, during the excitement of getting ready to go on a picnic, the boy had a convulsion, which lasted two minutes. After this convulsion he was greatly exhausted. These convulsions appeared more or less regularly about every thirty days after that time. He had a distinct aura, which he described as a feeling that something was going to happen, and usually he would get into bed. As far as his parents knew, he had never bitten his tongue or injured himself during one of these attacks. He did not froth at the mouth. These convulsions lasted from a few minutes to one-half hour, more frequently of the shorter duration. He was exhausted after the convulsions, and if conditions were favorable, he would go to sleep; many times he did not sleep at all, but got up

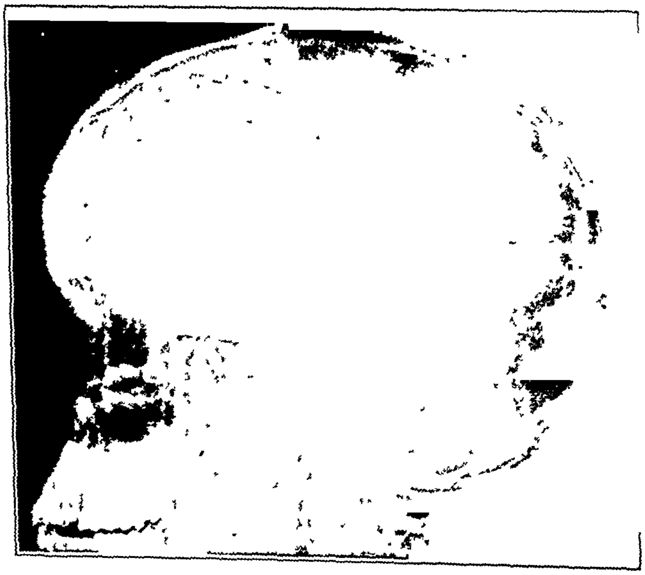

Fig. 2.—Lateral view of tumor.

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[1] Heuer, G. J., and Dandy, W. E.: Roentgenography in the Localization of Brain Tumor, Based on a Series of One Hundred Consecutive Cases, Bull. Johns Hopkins Hosp. **26**: 311 (Nov.) 1916.

[2] Miller, E. A.: Calculi within the Brain: Report of a Case of Intracranial Calcification with Successful Operation and Recovery, Surg., Gynec. & Obst. **34**: 786 (June) 1922.

[3] Lynn Thomas, John: Calcified Endothelioma, Brit. J. Surg. **9**: 490 (April) 1922.

and played normally. In describing the convulsions, the parents stated that they usually began on the right side of the body, first in the arm, then extending to the leg and later becoming generalized.

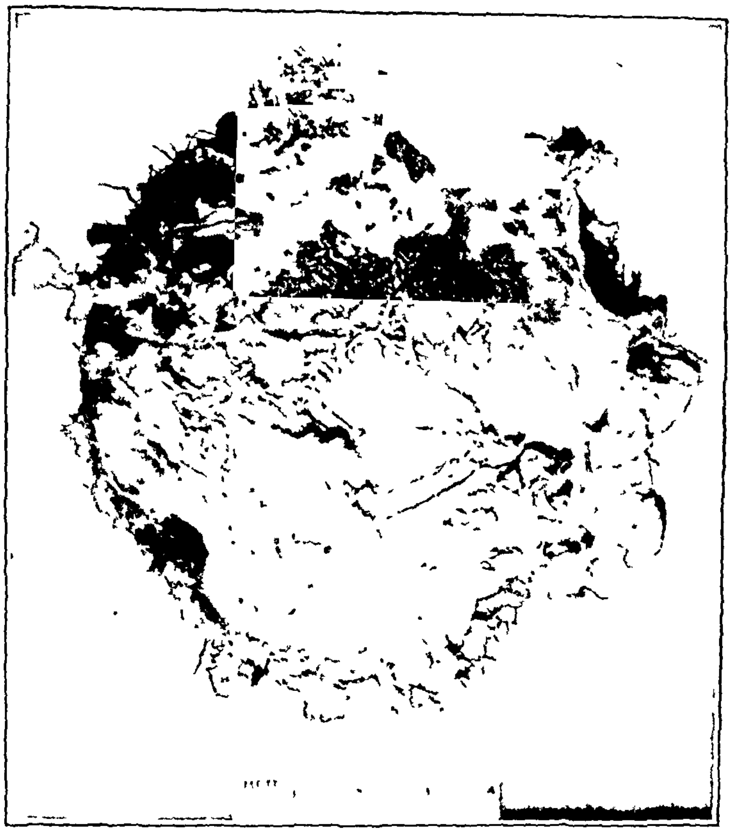

Fig 3 —Appearance of tumor after removal

Examination.—The boy was well developed and well nourished. He weighed 96 pounds (43.5 kg.). The head appeared considerably larger than normal, but the enlargement was symmetrical. The general physical examination was negative. He wore glasses for near work. The pupils were round and equal, and there was a slight vertical nystagmus. The conjunctivae were slightly inflamed. The media were clear, and the temporal half of each nerve head was pale. Roentgenograms of the head were taken to determine whether or not sinus disease was present, and a large, spherical, dense shadow appeared in the left frontal region as shown in Figures 1 and 2.

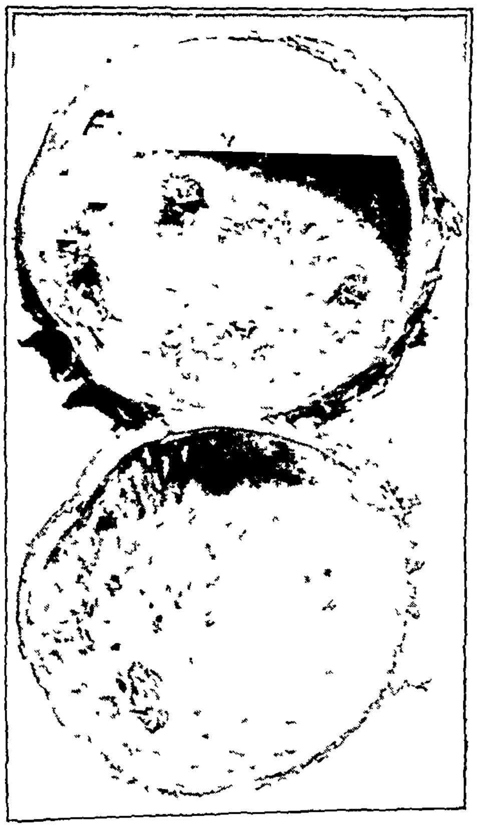

Fig. 4.—Tumor opened.

An examination of the blood showed: red blood cells, 4,500,000; white blood cells, 5,200; hemoglobin, 94 per cent.; the differential count was normal; the blood Wassermann reaction was negative; the urine was normal.

The neurologic examination showed a moderate right sided hemiparesis, more marked in the face and upper extremity. The reflexes were not altered. A diagnosis of a calcified cyst of the left frontal region was made, and an exploration was advised. I referred the case to Dr. A. W. Adson of the Mayo Clinic, and a record of the operation is included in this report

Operation and Result.—In view of the large, opaque shadow in the left lobe, there was some question as to whether the lesion was a large cyst with calcium deposit in the wall, or whether it was a solid, calcified mass. A left subtemporal frontal exploration was made, Dec. 2, 1924; when the dura was opened, the brain appeared to be discolored and edematous, and when a trocar and a cannula were inserted into the brain, a mass was encountered about 2 mm. below the cortex. The brain was then incised over the mass, and an irregular, rounded and calcareous tumor was exposed, which gave the impression of being solid rather than cystic. The operation was not continued at this time, since it was found necessary to turn an extensive osteoplastic flap over the frontal and parietal areas. The patient's convalescence following this procedure was without incident, and, December 13, a radical removal of the tumor was performed. The osteoplastic flap made at this time included the greater portion of the left frontal bone to the midline, and the greater portion of the parietal bone, with a base in the temporal area. The brain covering the tumor was purplish blue and was covered with large, distended vessels; it varied in thickness from 5 to 15 mm. To permit elevation of the tumor it was necessary to make an incision from the temporal area, forward and upward to the midline, ligating the vessels involved. An attempt at enucleation revealed the absence of a definite line of cleavage. The tumor was a part of the brain itself, and in order to elevate and remove it, it was necessary to incise the brain as it was retracted, gradually and with considerable difficulty. Following the removal, there was a marked cavity in the frontal lobe, as the tumor had originally developed within the frontal lobe; there had been a compensatory displacement of the brain posteriorly and to the midline, so that the lateral ventricle was not opened The cavity was filled with physiologic sodium chlorid solution, and the usual closure of the osteoplastic flap was made. The tumor measured 8 cm. in diameter, weighed 254 gm., and was rounded and fairly smooth. It presented the appearance of a small coconut, and when opened with a saw, it was found to consist of a calcareous shell, or capsule, from 2 to 4 mm in thickness, containing a liquid substance filled with cholesterin crystals, which resembled bronze paint such as is used in painting radiators.

Fig 5 —Appearance of patient when dismissed

The boy's convalescence was uneventful, and the wound healed by primary union He was dismissed from our care on the twenty-sixth day following the operation The paralysis in the right hand and arm was exaggerated immediately after the operation, but began to improve in a few days

Since his discharge from the hospital he has made an excellent recovery. The right sided hemiparesis has improved remarkably. He has returned to school, and his teachers report that he is making a strenuous effort to make up for lost time. In April, he contracted measles and was quite ill for several days. His temperature rose to 104 F., and he had a severe attack of bronchitis During the onset of the measles he had an epileptiform convulsion of short duration

At the date of this report, May 15, 1925, he is apparently well and has returned to school. His future history will be of unusual interest after the removal of such a large tumor from the substance of the brain.

ROENTGENOGRAPHIC BONE CHANGES IN A SECOND CASE OF OLD POLIOMYELITIS *

George B. Hassin, M.D.; E. L. Baker, M.D., and
Howard Wakefield, M.D., Chicago

In a case of an old poliomyelitis reported by one of us,[1] the bones of the lower extremities exhibited changes that almost paralleled those in the peripheral nerves and muscles involved. The paralysis in that case was of thirty-seven years' duration. In a second case here recorded, the duration of the paralysis was fifty-nine years and affected only one lower extremity.

REPORT OF CASE

History.—A man, aged 61, was admitted to the neurologic service (Dr. Hassin), March 2, 1925, on account of a left sided hemiplegia and weakness in the right lower extremity. He had been a patient of Cook County Hospital in 1918, suffering from weakness and numbness in the right upper extremity. After six weeks he was discharged and was in his usual health until four days prior to his second admission to the hospital, when he suffered an apoplectic stroke.

His mother told him that when a small child he fell on the floor and "crippled" his right lower extremity. He had remained a cripple since. The patient could not give any information as to the circumstances following the fall, but stated that ever since his early childhood he limped, the right knee would "give in," and that in walking he had to support the right thigh by placing his hand on it. He had had chickenpox, measles, croup, typhoid fever (at the age of 21) and a right inguinal hernia (since he was 33 years old). He was a heavy drinker up to 1916, but stated that he had not had venereal diseases.

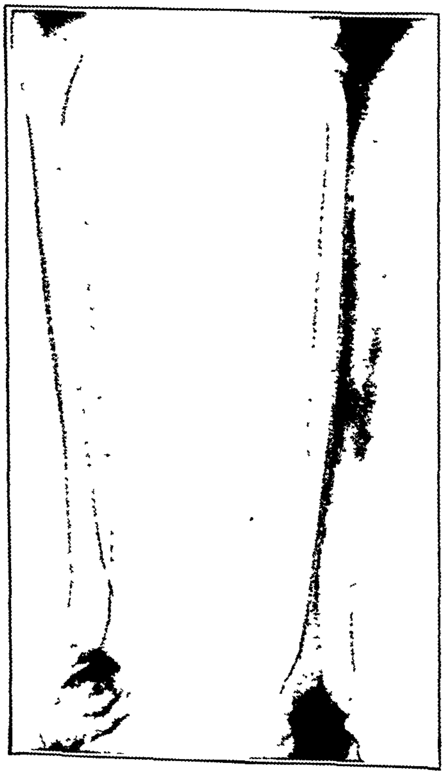

Fig 1.—Diminished diameter of right tibia and fibula, lateral and front views.

Examination.—This revealed a left sided spastic hemiplegia with increased muscle tone, exaggerated tendon reflexes, positive Babinski sign and absence of sensory or electrical changes. The right leg was shorter than the left by one-half inch, and was flaccid and markedly atrophied. At the level of 15 cm. above the knee it was 5 inches and at 12 cm. it was 1½ inches less in circumference than the left. At the level of 10 cm. above the external malleolus it was one-half inch smaller than on the left. Both feet were slightly deformed (pes cavus), and the right gluteal muscles were markedly atrophied, with the gluteal folds obliterated and marked fibrillary twitchings. These were also present in the atrophied muscles of the right thigh. The atrophy was degenerative, with loss of power and reflexes. Neither the nerves nor the muscles responded to faradic stimulation, while the galvanic current produced a flabby response when applied to the muscles directly. The cranial nerves, except the left lower facial, were normal. The left pupil normally reacted to light and in accommodation, but the right pupil was rigid, evidently because of an old iritis and a glaucoma of the right eye. There was a marked horizontal and rotatory nystagmus with the quick component to the left when the eyes were turned to the extreme left. When the eyes were turned to the right, an inconstant condition developed, with the quick component predominating to the left. The patient stated that so far as he could remember the eyes were always "restless."

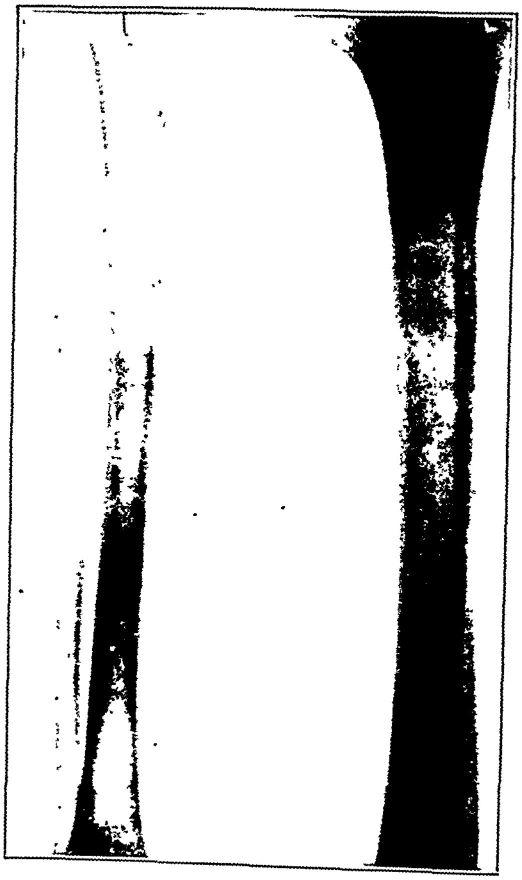

Fig. 2.—Lumbosacral paralysis: tibia and fibula of affected side, lateral and front views, no changes.

The sensibility, mental condition, fundi of the eyes, the genito-urinary organs, the urine and the serologic findings were normal.

On roentgen-ray examination, the right hip showed a rather shallow acetabulum and a slight lack of density of the bones of the corresponding lower extremity (lateral projection examination); here the diameter of the tibia and fibula was greatly diminished (Fig. 1). It was scarcely greater than that of the medullary canal of a normal size; the distal extremities of the tibia were practically normal in size. In addition, as the illustration shows, we might point out the smoothness of the affected bones and the lack in them of the usual anatomic characteristics—in short, the same features outlined in the previous contribution.

To summarize, the condition was left cerebral thrombosis, combined with an old flaccid paralysis of the right lower extremity and bone changes peculiar to old cases of poliomyelitis.

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* From the Neurologic Service of Cook County Hospital.

[1] Hassin, G. B; Lukas, Christine; and Brown, R. O.: Roentgenographic Bone Changes in a Case of Poliomyelitis, J. A. M. A. 65:1459 (Oct. 23) 1915.

COMMENT

While the atrophy of some muscles, such as around the hip joint, might have been caused by a joint lesion, such as arthritis, such an etiology would not account for the condition of the muscles of the thighs, legs and feet. It did, however, much resemble the condition seen in poliomyelitis, and is borne out, in our opinion, by the roentgenoscopic changes of the bones. Not only did it resemble the condition of the case referred to, but also the findings of Achard-Levy,[2] Oppenheim[3] and Bruns.[4] It differed greatly from another case[5] of flaccid paralysis of fourteen years' standing that also developed after a fall (at the age of 4) and resulted in a paralysis of all the muscles of the left lower extremity; that is to say, in a lumbosacral paralysis. The bones (Fig. 2) showed no atrophy or other changes found in cases of flaccid paralysis of spinal origin. The changes as outlined are most likely quite specific for old cases of poliomyelitis and may be of some diagnostic value, especially when, as in this case, the history is rather doubtful and incomplete. *Another point deserves attention:* As a poliomyelitic bone is impaired in its growth, nutrition and function, the power of regeneration must of necessity be rather meager. Therefore, in inflammatory, traumatic and other bone lesions occurring in cases of old poliomyelitis, the affected bones may be exceedingly slow in healing or not heal at all.

31 North State Street—Cook County Hospital.

CATARACT EYE SPECULUM*

GEORGE HUSTON BELL, M.D., NEW YORK

This speculum is designed to lay over the nose with the hinge or joint over the nonoperated eye, leaving the temporal region, on the side of the operation, entirely free from parts that might in any way limit the operator's freedom or come into accidental contact with the cataract knife or other sharp instruments.

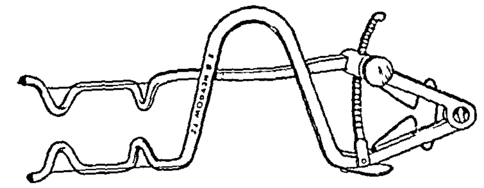


Fig. 1.—Cataract eye speculum.

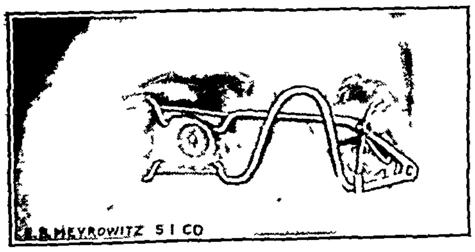


Fig 2.—Application of cataract eye speculum.

Special attention is directed to the distinctive form of the lower arm of the speculum, which is bent sharply upward, and returns, crossing the straight upper arm in the median line (anatomically speaking). The object of this bend is to have the two arms of the speculum cross the nose at the same level; otherwise the speculum is tilted out at the bottom and dislodged. The speculum is easily inserted and firmly retained, regardless of the size or shape of the nose.

The speculum was devised particularly for cataract operations to give the operator perfect freedom of movement of his fingers at all times, which greatly facilitates the making of a perfect cataract section; but it may be used in place of the ordinary speculum for all purposes. A separate speculum is required for the right and left eye.

This speculum is made by E. B. Meyrowitz Surgical Instruments Company of New York.

SMALLPOX IN TWINS AT BIRTH

JAMES A. MARTIN, M.D., LUMBERTON, N. C.

Mrs. W. H. N., aged 25, the mother of four children of normal pregnancy and delivery, while in the second stage of a very severe attack of smallpox, gave birth to twins, May 6, 1925, a 7 pound (3.2 kg.) boy, and a 6 pound (2.7 kg.) girl.

Twins born with smallpox.

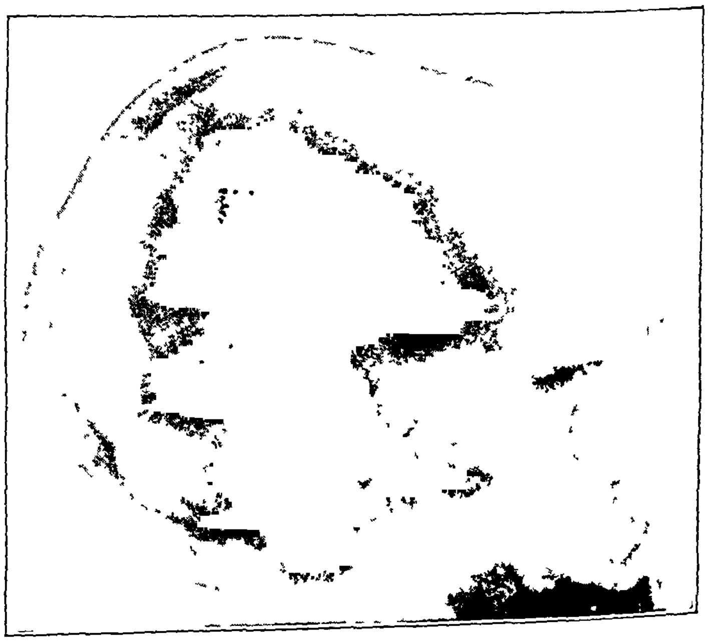
Both babies were born in the first, or papular stage, of smallpox. The boy had twenty or thirty papules scattered over the face and body; the girl, ten or fifteen. The boy has had a very severe attack of the disease, while the girl has had a rather mild attack. The mother has entirely recovered. The babies are now in the last stage of desiccation, and look as if they will make an uneventful recovery.

ROENTGEN-RAY THERAPY IN PITUITARY TUMOR*

IRA I. KAPLAN, M.D., NEW YORK

Assistant Roentgen-Ray Therapist, Bellevue and Beth Israel Hospitals

Tumors of the hypophysis, because of their uncertainty of origin and the clinical phenomena associated with them, form one of the most interesting of all groups of neoplasms.[1]



The large, eroded sella turcica as it appeared before treatment

According to the portion of the gland involved, the pituitary tumors vary in their pathology and clinical course. The anterior lobe is usually involved in the malignant and in the adenomatous types. Many cases are simple hyperplasias. Heteroplastic tumors are always associated with hypopituitarism, and manifest themselves by compression on the gland. The simple hyperplasias may or may not be associated with acromegaly, gigantism or obesity. These may go on to malignant change or may spontaneously regress. No case of acromegaly, however, has been associated with a heteroplastic tumor except one in which a glandular hyperplasia and a cerebellar cyst were coexistent.[2] These tumors often interfere with neighboring structures, and give rise to pressure on the optic chiasm. The visual disturbances usually make the patient apply for relief. They give rise also to metabolic changes and diabetes insipidus.

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[2] Achard-Levy: Radiographie des os dans la paralysie infantile, Nouv. iconog. de la Salpêtrière, 1897, p. 324

[3] Oppenheim: Lehrbuch der Nervenkrankheiten, Berlin 1: 234, 1908.

[4] Bruns, in Bruns, Cramer and Ziehen: Handbuch der Nerven-Krankheiten in Kindesalter, Berlin, 1912, p 327

[5] Hassin, G. B.; Levy, D M, and Tupper, W E.: A Case of Lumbo-Sacral Paralysis (Traumatic), J A M A. **74**: 95 (Jan. 10) 1920.

* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* From the roentgen-ray service, Bellevue Hospital, Dr. I Seth Hirsch, director

[1] Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1922.

The cause of this tumor is unknown, but Cushing[2] has suggested trauma as an etiologic factor.

The use of the roentgen ray has facilitated the diagnosis, and often the picture of an abnormal sella turcica on the roentgenogram gives the first and only sign of pituitary involvement. Tumors of the adenomatous type seem to react most favorably to irradiation. Béclère,[3] in 1902, first attempted to treat them by roentgen rays and early reported good results.

The case here reported is unique because of its etiology, symptomatology, diagnosis and extent of growth and because of its rapid reaction to roentgen-ray therapy and the apparent arrest of the disease.

REPORT OF CASE

A. C., a man, aged 34, a cheese handler, married, with four children, the youngest aged 2 years, received a musket blow on the head in 1909, while in the army. The blow made him unconscious and left a severe scalp wound, which healed and left no permanent disability. In 1918, while riding, he fell off a truck and landed on his head, suffering concussion and disability for a short time. Until the latter part of 1922 he felt all right, when, while reading his paper he saw letters and lines double. After a time he went to an oculist, who fitted him with glasses; but, not getting relief and finding his eyesight growing worse, he went to the oculist again for further advice. He also suffered with headaches and "stomach pains." The oculist referred him to Dr. Homer E. Smith, whose diagnosis was pituitary tumor. The patient's vision at this time was 20/35 for the right eye, no central vision in the left eye, and visual fields limited. He found difficulty in reading any but the large print of a newspaper, and had severe headaches.

Roentgen-ray examination at this time showed an enlarged sella turcica, the diameter being two and one-half times the average. The measurements were 2.5 cm. in the anteroposterior direction and 1.6 cm. in depth. The anterior wall, base and posterior wall were seen to be decreased in thickness. The posterior wall and clinoid processes, especially, showed marked thinning and rarefaction and possibly slight erosion. The base of the fossa appeared to be displaced downward, encroaching on the sphenoid sinuses. The pineal gland showed evidence of calcification. The patient was referred to Bellevue Hospital for roentgen-ray therapy.

The patient was large, well developed and husky looking, without any apparent signs of acromegaly. There were no apparent skeletal changes, and he had not had to get larger size clothes. There was a slight exophthalmos. The patient said that his head had not increased in size. Bitemporal hemianopia was present. There was no history of venereal infection. The blood Wassermann reaction was negative. The patient had noticed no loss of sexual function and had had no urinary symptoms.

A roentgenogram taken, July 25, 1924, showed the skull to be of moderate size, the bones of the vault of normal thickness, the diploic layer normal, slight convolutional impressions present in the frontal region, and calcification of the pineal body. The sella turcica was large, the anterior-posterior diameter being 24 mm.; the anterior clinoid was well formed and not eroded; the posterior clinoid was thin, apparently the result of pressure atrophy; the floor of the sella was depressed.

Neurologic examination at this time showed no abnormalities except marked bilateral temporal hemianopia. Diagnosis of pituitary tumor was thus confirmed by the roentgen ray and neurologic findings.

Between July 25 and Aug. 28, 1924, the patient received roentgen-ray therapy, the rays being directed over two temporal areas and one frontal area. He received a full erythema dose on each of these three areas in alternate and divided doses, the following factors being used: 190 kilovolts; 4 milliamperes; 0.5 mm. copper and 1 mm. aluminum filter; 50 cm. distance; 3 inch diameter fields.

At this time the patient was seen by Dr. Charles A. Elsberg, regarding the advisibility of operative intervention. Dr. Elsberg advised continuation of roentgen-ray therapy.

September 23, the patient reported that he felt much better, that his headaches were less frequent and less intense, that he could now easily read his paper, and that he even ventured to attend a moving picture show.

There was an erythematous patch over the frontal area and alopecia over the two temporal areas where the roentgen rays were applied. Vision had improved, and, whereas he had no central vision in the left eye before treatment, he now had 20/40; that of the right eye was now 20/30. Roentgen-ray examination of the skull at this time showed no change in the dimensions of the sella turcica from the preceding examination.

October 7, a second series of roentgen-ray treatments was given. Between October 7 and October 24, he had received a full erythema dose on both temporal areas, and 75 per cent. on the frontal area, in divided and alternate doses, with the same factors as before.

When seen, June 17, 1925, the patient said that he felt very well, his vision was satisfactory, and that he had had no headaches for many weeks. He had also gained in weight.

As in many of Cushing's cases, here too there was a distinct history of trauma, suggesting the etiology for the tumor. The symptoms of headaches, partial loss of vision with the lack of skeletal changes or loss of sexual power, were surprising, with the marked erosion of the sella as shown in the roentgenogram.

The marked bone erosion suggested a rapidly growing, malignant tumor; but the definite, rapid reaction to irradiation and the return of almost normal visual acuity, the bony erosion apparently being arrested, suggested a benign tumor of the adenomatous hyperplastic type.

The patient's sexual desire and power were normal. There were no skeletal changes.

Evidently there was no permanent effect on the optic nerve, as return of vision followed the reduction of the tumor mass.

55 East Eighty-Sixth Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

NEOSALVARSAN (See New and Nonofficial Remedies, 1925, p. 50).

The following dosage form has been accepted:

Neosalvarsan Dose XII.—Each sealed tube contains neosalvarsan, 1 8 Gm.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1925, p. 369).

Eli Lilly & Co., Indianapolis.

Schick Test (see New and Nonofficial Remedies, 1925, p. 370).—Also marketed in packages of two vials, one containing diphtheria toxin sufficient for fifty tests and the other vial containing the proper amount of diluent.

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[2] Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia, J. B. Lippincott Company, 1920.

[3] Béclère, A.: La radiothérapie des tumeurs de l'encéphale, Paris méd. 13:97 (Feb. 3) 1923.

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SATURDAY, JULY 25, 1925

ATHLETIC STRENUOSITY

For twenty-five years the tendency, in this country at least, has been to increase speed, until we have reached the age of little rest: almost no nerve and brain relaxation, and often not even enough muscle rest. The consequent mental and physical tire is interpreted by the business layman as a need for more exercise. If he cannot take regular exercise, he may drink more coffee or alcohol or use more tobacco, either to cause stimulation or to procure rest. When he does take exercise it is usually spasmodically, mostly at week ends and excessively, to the point, frequently, of causing heart tire. If his exercise is golf, it is thirty-six holes instead of eighteen; if it is tennis, it is five sets morning and afternoon; if it is walking, it is a cross-country "hike" with too many hills and too much climbing. Even motoring for pleasure has become "speed and distance," at tension instead of with relaxation. The efficient man would advise regular training for the development of any set of muscles for any particular test, but he does not seem to realize that the heart is a muscle and that without training (regular, daily, gradually increasing muscle work) he pushes it to tire and often to exhaustion by his spasmodic, unregulated exertion.

The restless age of speed, telephones, stenographers, dictagraphs, committee work, ceaseless interviews, overeating and hurried eating, artificial stimulation, chronic mouth infection (which is very frequent), all lead to one end: chronic cardiovascular-renal disease, the greatest cause of death in all our cities. The women do not escape this strenuosity, and are adding too much of the same program to their household duties. The result is the same as in men, except that women may have more nervous irritability, due to overstimulation of the thyroid gland.

The craze of the day is competitive athletics. Twenty years ago such sports were confined to colleges and universities, but now the disease of "athletic competitis" has spread to the high schools, and therefore to undeveloped youth. The larger the boy, without regard to his age, the more the captain and the athletic trainer corral him for physical stunts and competitive strains. A boy who has grown rapidly to oversize may not have his heart developed to fit his bulk. Ordinary exercise, even if not competitive athletics, causes his heart to work all that it is well able to do, and hence competitive speed or endurance is absolutely inexcusable in his case. Doubtless many fine, sturdy lads are damaged by high school athletics.

In colleges, the oversized boy, tall and overweight, is excellent football material. If not overtrained and heart-hurt at the time of the athletic tests, he acquires an hypertrophied heart and hence an increased systolic blood pressure, which makes him uncomfortable and mentally and physically "foul" (as he terms it) as soon as his athletic life ceases. He is from this time on an impaired insurance risk; as a rule, he does not live to his expectancy. In practically all colleges and in some schools, physical medical examinations are made of each boy or youth before he is accepted and trained for any special branch of athletics, and the diseased or damaged hearts are eliminated. But what medical examination of a boy or youth can exactly determine his reserve heart strength?

It would seem, therefore, that all competitive athletics should be graded to the average endurance for the age of the boy. The distance of the run and the length of the boat race should be kept down to the figure that is perfectly safe for well hearts at the given age. Acute heart strain is of not infrequent occurrence in training for athletics, to say nothing of such occurrence at the end of a race. It has been repeatedly shown that with the first strain of heavy work the heart increases in size; but it soon becomes normal or even smaller as it more strenuously contracts, and the cavities of the heart will be completely emptied at each systole. If the work is too heavy and the systolic blood pressure is rapidly increased, it may become so great as to prevent the left ventricle from completely evacuating its content. The heart then increases in size and may sooner or later become strained; if this strain is severe, an acute dilatation may of course occur, even in an otherwise well person. Such instances are not infrequent. A heart that is already enlarged or slightly dilated and insufficient will more slowly increase its forcefulness under the stress of muscular labor, and we have a delayed rise in systolic pressure. Also the paleness, faintness, nausea and vomiting that often occur after long runs or other severe strain, with or without heart pain, are evidence of heart strain. An athletic strain may not show an actual acute dilatation, but the heart weakness may persist for days and even weeks. Repeated heart strain must impair future heart tone. The heart strain face, as photographed at the end of a long competitive race, typically shows the actual circulatory strain undergone by the competitor. Falling over in the boat at the end of the four mile race is positive indication of the utter heart exhaustion.

The boy is ready to die for the fame and success of his alma mater, and the faculty, school mates and friends all put their faith and dependence on him. He must not fail! But is the sacrifice of even a small number (there may be many) of our fine, sturdy young men worth the price? Our young girls, in this age of feminine freedom, are also overdoing athletics. A girl should not be coddled because she is menstruating, but common sense (almost a lost commodity) at such a period should be exercised. How many of a basketball team of girls, scheduled to compete with another team on a given day, are beginning or in the midst of this feminine function, in which the uterus is physiologically congested and temporarily abnormally heavy, and hence liable to displacement by the inexcusable strenuosity and roughness of this particular game? Why should girls try tests of vaulting? Is such prowess worth the possible price?

Disapproval of graded constant calisthenics, exercise, athletics and outdoor life for all children and youth is not intended. Outdoor exercise and sports are essential for the health of adults. More walking and less automobiling have a value thus far not much appreciated. Our age has been characterized as "athletics crazy"; let us see whether we cannot get back to athletic "normalcy."

THE FORMATION OF BILE PIGMENT

The bile pigments, G. H. Whipple[1] wrote three years ago, may or may not be the most important components of the normal bile, but certain it is that they have received the largest amount of attention, clinical and experimental. Bile pigments appear in demonstrable amounts in the bile canaliculi of the normal or abnormal hepatic epithelial cell. It is therefore a bit too easy to think of the hepatic cell as the only essential factor in the elaboration of bile pigment. But it is well, Whipple concludes, for physician, teacher, student and investigator to keep clearly in mind that other body cells have the capacity rapidly to change hemoglobin to bile pigment.

No sooner is some striking evidence presented in support of one of the contending views as to the place of formation of bile pigments—for hepatic or nonhepatic origin, as the case may be—than a contradiction or a serious criticism is likely to be encountered. Recent investigations seem, however, to have furnished fairly conclusive answers to several debated points; hence the latest critical reviewer[2] feels justified in the statement that there is at present no proof that the epithelial liver cell is able to produce bile pigment, and furthermore certain facts fit perfectly the view that these cells merely excrete the pigment brought to them by the blood stream.

It is a demonstrated fact that bile pigment can be formed and appear in the plasma entirely independently of any activity of the liver. The most convincing proof was first secured by Mann and his collaborators[3] at the Mayo Clinic. More recent evidence has been contributed by Rich[4] at Johns Hopkins University, who observed the formation of bile pigment in dogs after removal of the liver by a method that leaves the entire musculoskeletal system within the circulation, but involves no preliminary interference with the blood supply to the liver. It is clear, therefore, he maintains, that there exists some mechanism outside the liver which, if it is not continually in operation normally, is certainly able to take over the function of bile pigment formation on immediate notice.

This shifting of the possible site of origin of the bile pigments away from the liver endothelium has necessitated the search for a new place of pigment genesis. Does the process partake merely of the nature of a chemical synthesis in the blood stream, or are some specific kinds of cells involved. Whipple ventured the tentative view that the formation of bile pigments might be a function of both the liver endothelium (Kupffer cells) and the hepatic epithelium, the preponderance of activity being determined by factors not understood at present. He suggested that the Kupffer cells may be concerned with production of bile pigments from hemoglobin present in the blood stream, while the hepatic epithelium may be especially concerned with the manufacture of bile pigments from other substances which may be derived from the food or body cell protoplasm. Rich has presented the evidence that cells of the reticulo-endothelial type can form bile pigment, but this evidence is not yet complete enough to be regarded as proof. There is no evidence whatever, he holds, that any other type of cell can form the pigment, nor is there any proof that the pigment can be formed extracellularly by enzyme action. According to Rich, we are still unable to speak with certainty about the normal site of origin of bile pigment.

It is not difficult to understand how the so-called reticulo-endothelial system could be concerned with the production of bile pigments. The cells that belong to it, whether the Kupffer cells of the liver, the clasmatocytes (or mononuclear wandering phagocytes) of the connective tissue, the monocytes (or "large mononuclear cells") of the blood, or the characteristic phagocytic cells of the spleen, bone marrow and lymph glands, have phagocytic propensities. They can be found performing the function of phagocytizing red cells and their fragments under normal and pathologic conditions. Direct observations as well as microchemical stains for iron leave no doubt that the hemoglobin of the engulfed erythrocytes is broken down within these cells into simpler substances. According to Rich, therefore, it is not difficult to believe that cells which assume such a rôle in the catabolism of hemoglobin throughout the animal kingdom may be the cells concerned in the formation of this catabolic product of hemoglobin—bilirubin. Indeed, it is not unlikely that the participation of phagocytic tissue cells of the type nowadays termed clasmatocytes serves to account for the appearance of bilirubin, alias hematoidin, in extravasations of blood in the body. In suggesting this we may, however, be justifying a recent comment that "the reticulo-endothelial system is being ridden a bit hard just now."

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[1] Whipple, G. H.: The Origin and Significance of the Constituents of the Bile, Physiol. Rev. **2**: 440 (July) 1922.

[2] Rich, A. R.: The Formation of Bile Pigment, Physiol. Rev. **5**: 182 (April) 1925.

[3] Mann, F. C.; Bollman, J. L., and Magath, T. B.: Formation of Bile Pigment After Total Removal of the Liver, Am. J. Physiol. **69**: 393 (July) 1924.

[4] Rich, A. R.: On the Extrahepatic Formation of Bile Pigment, Bull. Johns Hopkins Hosp. **36**: 233 (April) 1925.

OCULISTS AND OPTOMETRISTS

Is it libelous to publish an avowal of one's faith in oculists and to advise persons suffering from defective eyesight to patronize them? The question is raised in apparent seriousness in a suit recently filed in Missouri. The O. H. Gerry Optical Company of Kansas City, Mo., advertised in the Joplin (Mo.) *Globe* the qualifications of oculists, expressed its confidence in their work, and advised persons needing glasses to consult oculists who are doctors of medicine. Its advertisement read:

> Have You Good Eyes?
> The eye specialist who is also a fully trained physician M.D. is termed an OCULIST
>
> No other similar word means all of that—the combination of every professional qualification for the care of the human eye, with at least five to seven years of college education in medicine.
>
> This is important when it is considered how many disorders of the eye have their origin elsewhere in the body. Many things other than lenses may be required for treatment of the eyes.
>
> When conditions do indicate the need for eye-glasses, medical factors are involved whose meaning only the trained physician can know.
>
> Many persons have tardily discovered this because the Oculist, earnestly at work, and bound by lofty professional ethics, does not thrust himself forward.
>
> But we, who have served Oculists for years, know their supreme importance. So strongly do we feel that the health of the nation's eyes can be entrusted only to this Physician-Specialist, the Oculist, that we restrict to Oculists exclusively, all distribution of our products.
>
> It is a business policy, but founded on reasons which may well guide you when your eyes require professional attention.
>
> Be sure that the one who examines your eyes for glasses is an Oculist, M.D. The prefix "Doctor" or "Dr." does not always mean a "Doctor of Medicine," but the letters "M.D." after a name signifies "Doctor of Medicine." For "THE SAFE WAY" consult an Oculist.
>
> O. H. Gerry Optical Co.
> KANSAS CITY, MO.
>
> *An educational campaign in the interests of better vision being conducted by the O. H. Gerry Optical Co. as a public service.*

Now in the town of Joplin which is located in Jasper County, Missouri, there resides a person who claims to have been engaged for many years "in the profession and business of optometrist and optician." He avers that the article was circulated within the precincts of his business and he says that such a statement is "false, defamatory, malicious and libelous," and that it tends to deprive him of his income and of the confidence of those with whom he has had or might hereafter have professional or business relations. At least the lawyers say that for him in their simple way. So the plaintiff asks that the court give him judgment against the O. H. Gerry Optical Company and the Joplin *Globe* Publishing Company for $10,000 as his actual and compensatory damage and for another $10,000 as punitive damages.

If the Missouri courts should hold that an advertisement is libelous because it proclaims the advantages of services or merchandise offered by one group and, by bringing business to that group, lessens the business of another or others, advertising will probably become a lost art, at least in Missouri. The very purpose of most advertising is to accomplish such ends. Meanwhile physicians may rightly express their appreciation of the truth contained in the announcement by the defendant in this case.

Elsewhere in this issue (see page 286) is the story of several firms who do not even make the examinations that optometrists make in prescribing glasses for their customers. What a heavy toll in deficient vision and ruined eyesight the American people must pay each year for the right to indulge in poorly qualified, and in the end, more costly service!

Current Comment

TREATMENT OF PERNICIOUS ANEMIA

Physicians who succumb readily to routine habits of working and thinking are likely to forget that there may be, as Warfield[1] has said, cases of pernicious anemia presenting normal blood counts or a color index below one or one plus. The lack of free hydrochloric acid in the stomach contents is a clinical sign, in the absence of which many hesitate to diagnose pernicious anemia. Hunter believes, it is stated, that the presence of sore tongue, slight fever, lemon-yellow color and a seasonal character of the disease in a patient more than 40 years of age affords sufficient basis for a diagnosis. Since chronic focal infection may simulate pernicious anemia, every case requires intensive study, and every clinical and laboratory facility should be used to insure certainty. This includes roentgenograms, cultures of the duodenal contents, examinations of the stools, and a study of the teeth and sinuses. If the evidence thus obtained points to the gallbladder, appendix or other abdominal organ as a source of toxin, a laparotomy may be justified. Among fifty patients whose spleen had been removed as a curative measure in pernicious anemia, Giffin and Szlapka found that 21.3 per cent. of those who survived the operation lived at least three years. Krumbhaar published a statistical study of 208 patients whose spleen had been removed. There was improvement in 144; no improvement in twenty-six; thirty-five died following the operation, and seventy-nine died subsequently. Arsenic in the form of solution of potassium arsenite given by mouth, Warfield believes, is still the best drug to administer. In view of the achlorhydria, it is logical to administer hydrochloric acid. There seem to be no reliable statistics to indicate that blood transfusions ever cured a case of pernicious anemia. In the presence of a malady so fatal, intense study of every case may not only rescue a small number of the victims but also result in the accumulation of data that will eventually lead to the solution of the problem of complete control.

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[1] Warfield, L. M.: How Can We Best Treat Pernicious Anemia? New York State J. Med. 25: 147 (Feb. 6) 1925.

MODERNISM AND HUMAN WELL BEING

To one who surveys the story of human welfare from an historical point of view, certain anomalies present themselves for consideration. Much of the vaunted progress is disclosed in the form of highly artificial changes, which have profoundly altered the ways of living and affected the reaction of the organism to a somewhat novel environment. Gains in one direction have almost inevitably entailed the giving up of something traditional, for that is the usual consequence of progress. In our enthusiasms for the new advantages we are all too often prone to overlook the possible virtues of that which is replaced or abandoned. A pessimist might occasionally debate whether, in the long run, the alleged benefits overbalance the loss of that which was good. Machinery has altered the problem of human and even of animal toil; urban life has acquired aspects of extreme artificiality; older dietary regimens have given way to new foods; the call for haste has speeded up man's nervous responses; even the atmosphere has been changed through formerly unknown contaminations. It is not strange, therefore, that thoughtful persons sometimes face the innovations of our present-day life with a querying mind. Something of this skepticism appears in a recent comment by a keen observer, Sir Philip Gibbs,[1] regarding the apparent dirt and squalor encountered in the Near East:

> I doubt whether the Egyptian people would appreciate a change to modern life, with its conveniences and labor-saving devices. Their philosophy of life is different. Their measure of happiness is not the same. Their appearance of poverty is exaggerated. They are not even so dirty as Americans think. Sun and air are cleansing, life giving, joy giving. They laugh more than the people of Pittsburgh or Sheffield. They are more contented. Their nerve strain is not so great. Their desires are simpler, more natural, more easily satisfied. Perhaps we make a fetish of that word "progress."

It would, indeed, be sheerest folly to expect those who have tasted the best that modern life in our American and European civilizations affords to abandon that which has so much of real good in it. But sober reflections, such as those of Sir Philip Gibbs, are not in vain if they help to stress anew that there is a pace that kills and that we "moderns" must reclaim the health-giving advantages of sunshine and the outdoor life. The simplest existence is abandoned, presumably without widespread regret; but there remains abundant opportunity to dispel fretfulness and premature worry wherever laughter is permitted to be a real part of living.

GASTRIC JUICE AS A GERMICIDE

At the conclusion of the experiments on digestion reported in 1783 by the abbé Spallanzani, professor of natural history at Pavia, there occurs the significant statement that "the gastric juices are antiseptic." Written long before the advent of modern microbiology, it is obvious that these words must not be given quite the same implication that would attach to a similar expression at the present time. The inciting causes of "sepsis" were not known, though its manifestations were well recognized. The pioneer American physiologist William Beaumont, observing the properties of the gastric juice of Alexis St. Martin a century ago, ventured the statement that "it checks the progress of putrefaction." Such are the forerunners of the numerous subsequent claims for the germicidal action of the gastric juice. In contemplating this presumption, a recent writer has remarked that the acid secretion of the stomach, with its pepsin enzyme, is given credit for an ability to destroy swallowed living bacteria almost universally and unequivocally; and yet, if this is so, whence comes the prolific and varied bacterial flora of the intestinal tract? Surely not entirely by infection introduced through the anus; and more surely not even in small part can infection by way of the blood and lymph streams be given credit for the luxuriant growth of colonic bacteria. It must come by way of the stomach, from the mouth. It cannot be said that there is a dearth of experimental evidence on this subject, although it has not been convincing enough to give a decisive answer to the inquiries just raised. The fundamentally important item seems to be the familiar fact that the hydrogen ion concentration, and accordingly the bactericidal potency of the gastric contents, does not always rise to or remain at an acidity that represents protective potency against all bacterial species. In a recent study made by Bartle and Harkins[1] at the Research Institute for Cutaneous Medicine in Philadelphia, it was observed that gastric contents are by no means always sterile. Practically no germicidal value was demonstrated at concentrations of "free" hydrochloric acid below 0.04 per cent.; but gastric juice containing from 0.08 per cent. upward had a well marked bactericidal value. The results obtained with the specimens of gastric secretion were not essentially different from those secured with pure hydrochloric acid solutions of equivalent hydrogen ion concentration. The Philadelphia investigators conclude from their varied tests that while many bacteria are killed in transit through the stomach of a man having a normal amount of hydrochloric acid in the gastric juice, many, perhaps very many of the more resistant types, traveling with food particles and mucus, pass through unaffected by Nature's barrier. This seems to be particularly true of *Bacillus acidophilus*.

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[1] Gibbs, Philip: What About Egypt, World's Work, May, 1925.

[1] Bartle, H. J., and Harkins, M. J.: The Gastric Secretion: Its Bactericidal Value to Man, Am. J. M. Sc. **169**: 373 (March) 1925.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Personal.—Dr. John E. Garrison, Birmingham, for more than thirteen years obstetrician at the Salvation Army Hospital, has resigned.

Hospital News.—Work has begun on the construction of a $100,000 addition to St. Vincent's Hospital, Birmingham. ——A contract was recently let for the construction of a new building, costing $141,000, at the Huntsville Hospital, Huntsville.

Million for Hampton-Tuskegee.—John D. Rockefeller, Tarrytown, N. Y., has given $1,000,000 in securities to the Hampton-Tuskegee endowment, bringing the fund to $4,500,000 of the $5,000,000 being sought. The money will be divided equally between the two institutions for negroes, one of which is in Hampton, Va., the other in Tuskegee.

CALIFORNIA

Health Officers' Meetings.—The Pacific Coast Conference of Health Officials will meet at Long Beach, September 28-October 3. The annual convention of the Health Officers of California will be at Long Beach during the same period. Dr. Fred W. Browning, Hayward, is secretary of both organizations.

Licenses Revoked and Restored.—At the regular meeting of the California State Board of Medical Examiners, July 7-8, San Francisco, the license to practice as a physician and surgeon of Dr. Charles Russell Knox, Los Angeles, and that of Dr. Earl Harlan, Colusa, were revoked, and the license of Dr. Robert D. Mace, Ukiah, which had been revoked in October, 1924, was restored.

H. G. Russell Arrested.—According to the Los Angeles *Times*, H. G. Russell, the head of a "spiritualist colony" at Buena Park, was recently arrested on a charge of practicing medicine without a license in the so-called "Spiritualist Sanitarium." The complaint was sworn to by Albert Carter, a special agent of the state board of medical examiners. Russell was released on $5,000 bail.

Hospital in Yosemite National Park.—At the last annual meeting of the California Medical Association, a resolution was adopted to the effect that the association exert its efforts in every possible manner on both U. S. congressmen and senators in supporting measures seeking an appropriation for building an adequate and well equipped hospital in the Yosemite National Park. It was pointed out in the resolution that the present hospital in the park is inadequate, the buildings are antiquated and not fit for expansion, and that there is an increasing demand for a first-class medical and surgical service on the part of tourists from all over the United States.

Infantile Paralysis.—Since January 1, 175 cases of infantile paralysis have occurred in the state, it is reported, as compared with thirty cases in the first six months of last year. The state board of health has repeatedly called attention to the undue prevalence of this disease this year in its *Weekly Bulletin*. There has never been so high an incidence during the late spring and early summer months, and at present it it not confined to any particular locality but is state wide. The board considers that the present condition regarding this disease in California requires the most stringent control measures, and publishes a condensed statement of methods for its prevention and control.

Whittier Deleted from Mr. Murphy's Will.—As a result of the attitude of the board of trustees of the city of Whittier and of the board of trustees of the hospital toward the desire of Mr. Simon J. Murphy, Jr., to maintain the Murphy Memorial Hospital as a Class A hospital in accordance with the standards of the American Medical Association, Mr. Murphy, the donor of the hospital to the city of Whittier, has deleted from his will the $200,000 endowment that was to have been bestowed on the hospital. According to *California and Western Medicine*, the suit that had been entered to declare the original trust void has been withdrawn. Mr. Murphy feels that the money invested in the hospital is a loss and has had removed from the hospital the pictures of his father and mother, to whom the institution was intended as a memorial (The Journal, June 28, 1924, p. 2124, and May 30, 1925, p. 1672).

FLORIDA

Applicants for License.—At the meeting of the state board of medical examiners, Tampa, June 15-16, 252 applicants were examined. The *Journal of the Florida Medical Association* says that among the applicants were many physicians of international reputation.

"Creeping Eruption" Clinic.—The state board of health held a clinic at Jacksonville, July 10-20, for the study of "creeping eruption," which was in charge of Dr. Joseph Lee Kirby-Smith and with whom was associated W. E. Dove, entomologist, and G. F. White, insect pathologist, both of the U. S. Bureau of Entomology. The group in the last year has identified, according to the *Journal of the Florida Medical Association*, a microscopic nematode (*Agamonematodium migrans*) as the cause of "creeping eruption."

GEORGIA

License Revoked.—The state board of medical examiners announced, July 9, that the license to practice medicine of Dr. M. W. H. Lewis, Carrollton, had been revoked following a hearing on charges of violating the Harrison Narcotic Law.

Hospital News.—The John D. Archbold Memorial Hospital, Thomasville, was dedicated, June 13. The hospital was presented by John F. Archbold as a memorial to his father. The director is Col. James L. Bevans, M. C., U. S. Army, retired.

Personal.—Dr. Obie B. Walker has been reappointed to the state board of medical examiners for a term of four years. Dr. Walker has been on the board since 1913.——Dr. George A. Paulk, Alapaha, has resigned as a member of the Georgian Industrial Commission to engage in the practice of medicine at Miami, Fla.

ILLINOIS

Personal.—Dr. Henry B. Knowles of the state charitable service has been transferred from Bartonville to Dixon, to be assistant managing officer of the Dixon State Hospital. ——Dr. Herman J. Hensley has been appointed to the board of health of Yates City.——Dr. M. A. Karol, Decatur, has been appointed surgeon in charge of the Wabash Railroad Hospital in that city, to succeed Dr. Frank E. Smith, who has been appointed chief surgeon of the Wabash Railroad to succeed the late Dr. M. P. Parrish.

Typhoid Following Club Meeting.—The state department of health reports that nine persons developed typhoid among the twenty-five who attended a club meeting near Chana in May. Those who became sick had eaten food served at the party, and evidence obtained by an investigator of the state health department indicated that one of the hostesses was ill at the time she prepared an uncooked salad. The typhoid incidence in Illinois for June was nearly twice that for June of last year, and higher than for the corresponding month in any year since 1921. For the first six months of this year, 505 cases of typhoid were reported, against 359 for the corresponding period of 1924.

Chicago

Hospital News.—The Michael Reese Hospital is making plans for a $1,000,000 addition, including a laboratory building.

Personal.—Dr. Alice Hamilton, assistant professor of industrial medicine, Harvard University Medical School, Boston, and a member of the health commission of the League of Nations, spoke recently at a luncheon at the City Club on "International Aspects of Public Health, Including the Control of Ethyl Gasoline."——Marion Hines-Loeb, Ph.D., assistant professor of anatomy, University of Chicago, has accepted the position of associate in anatomy at Johns Hopkins University Medical Department, Baltimore.

Behavior Institute Planned.—A committee of fifty physicians and philanthropists has undertaken to raise the necessary funds to establish a Behavior Research Institute in Chicago where problems of the child may be studied and work done to prevent juvenile crime and delinquency. It will be allied to the present Institute for Juvenile Research. Booklets describing the proposed work have been sent to 1,000 citizens, whose help has been solicited to raise an annual fund of $55,000 for the next five years.

INDIANA

Society News.—Dr. Harry Jackson, Chicago, recently addressed the La Porte County Medical Society, Michigan City, on "Diagnosis and Treatment of Head Injuries," and "Chronic Synovitis; Synovectomy, with Lantern Slide Illustrations."

Appointment of Board of Podiatry.—In compliance with a recent law creating a new state board of podiatry examiners to license persons found eligible to practice, the appointment of the following members of the board was announced, July 15: Drs. Eldridge M. Shanklin, Hammond; Jesse W. Bowers, Fort Wayne, and William T. Gott, Crawfordsville, who represent the board of medical registration and examination, and R. Everett Snick, Indianapolis, and L. K. Bunch, South Bend, representing the podiatrists. Applicants who have received two years' training at a so-called recognized school of podiatry are eligible to take the examination. Indiana is said to be the thirty-second state to establish a podiatry board.

Typhoid Outbreak Following Conference at Winona Lake.—Following the annual conference of the Church of the Brethren at Winona Lake, in June, at which, it has been estimated, 25,000 people congregated, there has been a number of cases of typhoid among those who attended the conference. The assembly was composed of people from many different states. The commissioner of health of Illinois announced, July 17, that there had been reported to his department up to that time seven cases among residents of Illinois who attended the assembly. The state board of health of Indiana conducted an investigation of the situation at Winona Lake, and in reporting to the Brethren Publishing House said that there seems little doubt that the infection was water borne, and that two possible sources were found. An underground storage reservoir that is not ordinarily used was turned into the regular water supply for three days in June, and an examination of this water gave evidence of pollution. There was a breakdown in the "canal system" at Winona Lake during the conference, and a connection was opened between the regular water supply and the canal supply in order that the public water supply might be turned into the flushing system at the rest rooms. It was impossible for the board to determine just what took place in shifting the two supplies and in reestablishing the valve connection intended as a precaution, but enough is known to establish the probability that water from the canal was taken into the mains of the public water supply. Action has been taken to eradicate the sources of pollution. The cistern was immediately disconnected from the public water supply system, the water mains were flushed, and a disinfectant was put in the supply tanks and flushed through the mains, and the Interstate Public Service Company ordered a chlorinating outfit. Following these cleansing operations, samples have been taken from the public water supply for examination and they are now "uniformly good and satisfactory."

LOUISIANA

Graduate School to Reorganize.—The board of administrators of the Tulane University of Louisiana has decided to reorganize completely the Graduate School of Medicine so as to meet more fully the recommendations of the Council on Medical Education of the American Medical Association. A committee has been appointed to work out the plans of reorganization, and it is expected that the school will be fully organized and ready for work by the beginning of the 1925-1926 college year.

Appointments at New Hospital.—The superintendent of the new Southern Baptist Hospital, New Orleans, the first unit of which will have a capacity of 150 beds and be open to receive patients by Jan. 1, 1926, has announced the appointment of Dr. Carroll W. Allen to be head of the department of surgery; Dr. Oscar W. Bethea, medicine; Dr. John T. O'Ferrall, orthopedics; Dr. Thomas B. Sellers, gynecology and obstetrics; Dr. Henry W. E. Walther, urology; Dr. Charles S. Holbrook, neuropsychiatry; Dr. Rena Crawford, pediatrics; Dr. James P. O'Kelley, otorhinolaryngology; Dr. Victor C. Smith, ophthalmology, and Dr. Ansel M. Caine, anesthesia.

MARYLAND

Drastic Action Against Dogs.—Because of the number of dogs reported as having rabies in the vicinity of Towson, and because of the death of a woman from rabies after having been bitten, Dr. Josiah S. Bowen, deputy state health officer of Towson, has issued orders to shoot on sight any dog within a specified area in Baltimore County unless the dog is leashed. The health officer said this was expected to prove an effectual, if drastic, means of preventing further outbreaks of rabies among dogs and the consequent attacks on persons. The territory will be placarded and all persons warned to keep their dogs in leash.

Campaign to Prevent Infant Deaths.—Three hundred infants died in Baltimore in 1924 from diarrheal diseases, a number nearly double that of the deaths from scarlet fever, typhoid, measles, whooping cough and diphtheria combined. The city health department is conducting a campaign to prevent such serious diseases this summer. The bureau of child welfare is now fully equipped to carry on education among all classes throughout the city. A bulletin has been issued to every physician in Baltimore requesting that all cases of diarrheal diseases be reported promptly to the bureau.

MASSACHUSETTS

Twenty-Five Years of Certified Milk.—According to the *Boston Medical and Surgical Journal*, the Walker Gordon Company was host to a number of health workers and pediatricians, June 25, at its farm at Charles River Village, which event marked a quarter century of development in the clean milk industry. Among the speakers were Dr. Theobald Smith, head of animal pathology, Rockefeller Institute for Medical Research, New York; Dr. Harris Moak, president, American Association of Medical Milk Commissions, and Dr. Kenneth D. Blackfan, professor of pediatrics, Harvard University Medical School, Boston, and president of the New England Pediatric Society.

New Laboratory Building at Wood's Hole.—In 1920, the trustees of the Marine Biological Laboratory, Wood's Hole, in cooperation with the National Research Council, began a search for funds to erect a new building and laboratories, and by January, 1924, $1,400,000 was in hand, representing contributions of the Rockefeller Foundation, the Carnegie Corporation, John D. Rockefeller, Jr., and the Friendship Fund. Charles R. Crane, in addition, agreed to be responsible for the cost of the building beyond the original estimate of $500,000. The new building was dedicated, July 3, and $900,000 of the total sum has been invested for endowment, so that the laboratory now administers about $2,000,000 represented by plant and investment. The new building has space for expansion of the library, a lecture hall, general offices, research rooms, roentgen-ray rooms, galvanometer room and various other rooms, to meet the needs of advanced biophysical and biochemical work. The president of the board of trustees, Charles R. Crane, presided at the dedication, and the director, Prof. Frank R. Lillie, Ph.D., and Dr. Edmund B. Wilson, Columbia University, New York, and Prof. Edwin G. Conklin, Ph.D., Princeton University, N. J., gave addresses.

MICHIGAN

Society News.—Dr. George V. Brown, Detroit, addressed the Genessee County Medical Society, June 24, on "Appendicitis in Children."

Forms for Health Examinations.—Instructions for taking periodic health examinations and forms to record them have been placed in the hands of every member of Wayne County Medical Society.

Personal.—Dr. John W. Toan, formerly assistant superintendent of the state sanatorium at Howell, has accepted the appointment of director of the tuberculosis division of Herman Keefer Hospital, Detroit, effective August 10.

MINNESOTA

Hospital News.—The Hennepin County Board of Commissioners is receiving bids for a new hospital for the Hennepin County Farm, Hopkins, which will cost $225,000.

Personal.—Dr. Henry L. Williams, Minneapolis, has resigned as medical chief of the Veterans' Bureau in Minneapolis.——The Royal Spanish Academy of Medicine conferred a degree on Dr. Charles H. Mayo, Rochester, at a meeting in Madrid, May 27.——Dr. Edward C. Rosenow, Rochester, recently received the honory degree of doctor of laws from Park College, Missouri.

Golf Committee.—The president of the Hennepin County Medical Society has appointed a golf committee, which will arrange tournaments for members of the society during the remainder of the season, and has sent a questionnaire to members to determine their golf status, so that the tournaments may be arranged satisfactorily to all. There is a charge of $1 to defer the cost of postage and stationery.

MISSISSIPPI

State Association Readopts Journal.—At the recent meeting of the Mississippi State Medical Association, the house of delegates unanimously voted to continue the adoption of the *New Orleans Medical and Surgical Journal* as its official organ.

MONTANA

Personal.—Dr. Charles E. K. Vidal has been reappointed superintendent of the State Tuberculosis Sanatorium, Deer Lodge.

State Medical Election.—At the forty-seventh annual meeting of the Montana Medical Society, Lewistown, July 9, Dr. Charles F. Watkins, Billings, was elected president; Dr. Fred F. Attix, Lewistown, president-elect; Dr. Ernest D. Hitchcock, Great Falls, vice president, and Dr. Elmer G. Balsam, secretary-treasurer, reelected. Glacier National Park was selected as the next meeting place in the event that the Pacific Northwest Medical Association holds its meeting there.

NEBRASKA

Personal.—A farewell dinner was recently given at Lincoln by the premedical students of the university to Dr. Irving S. Cutter, dean of the medical school, who was then soon to leave to take up the deanship of Northwestern University Medical School, Chicago.

NEW JERSEY

Personal.—The governor reappointed, July 10, Dr. Charles A. Groves, East Orange, to the state board of medical examiners.

Smallpox in Jail.—The discovery of a case of smallpox in the Hudson County jail, Jersey City, July 1, caused the board of health to vaccinate the remaining 121 prisoners as well as all the attachés, and to place a quarantine on the jail.

NEW MEXICO

Rabies Quarantine.—According to the state bureau of public health, a quarantine has been placed on all dogs in Chaves County, as the result of the discovery of several dogs with rabies. Under the terms of the quarantine, a dog must be kept at home or muzzled, or taken out on a leash, or wear a tag which shows that he has been vaccinated against rabies. The health commissioner does not consider the condition in Chaves County alarming.

NEW YORK

Society Adopts Health Examination Form.—The Medical Society of the County of Albany has adopted a printed form for recording the results of periodic health examinations and sent a sample copy to each member of the society.

Visiting Nurses Extend Service.—The Henry Street Visiting Nurse Service in Manhattan, Richmond, and the Bronx, which was organized primarily for those who could not pay for the service of trained nurses, is now extending its services to meet the needs of the middle classes who cannot afford a full-time nurse. The nurses are distributing leaflets to physicians in regard to their service. The medical advisory committee of the Henry Street Visiting Nurse Service recently provided a set of standing orders for this work.

Resolution on Candidates for Legislature.—The Suffolk County Medical Society unanimously adopted the following resolution at a recent meeting:

> *Resolved,* That the legislative committee of the society be increased to five members, and that such committee be instructed to interview the county political committee with a view of securing the nomination of candidates for election to the legislature who will be guided in matters pertaining to public health and treatment of the sick by the Suffolk County Medical Society; and be it further
>
> *Resolved,* That the members of the society here present agree to use their influence in behalf of the candidates recommended by the committee, and to vote in a nonpartisan manner in case only one of the political parties will accede to the request of the legislative committee of this society.

Annual Report of Manhattan State Hospital.—The trustees and medical director of the Manhattan State Hospital have just issued an annual report which shows that the population of the hospital approximates 9,000, a number, according to *New York Medical Week,* far in excess of its housing facilities. An appeal is made in the report for new buildings and improvements in existing structures and better fire prevention. Attention is called especially to the need for buildings for the resident medical staff and to various phases of the medical work performed in the last year.

The Mayors' Conference and Public Health.—An assemblage of city officials in 1910 resulted in the organization of the Mayors' Conference, and was the beginning of a movement that led in reorganization of the state health department. The first meeting, according to *Health News Service,* was called for the sole purpose of considering public health questions. In the last fifteen years, the conference has been a large factor in securing the adoption of a uniform budget and accounting system for health bodies, a method of scientific scoring for health work, and the model milk ordinance which has been accepted by thirty-seven cities and villages. The Mayors' Conference is now an organization of sixty cities and thirty first class villages. Among other activities, it maintains the New York State Bureau of Municipal Information at Albany, which makes available to all local health officials the best efforts of every American city in health work.

New York City

Jacob Schneider Guilty.—Jacob Schneider, 53 West Sixty-First Street, who has been practicing without a license for several years, has pleaded guilty to a charge of violating the medical practice act, it is reported.

Director of Bureau of Hospitals Appointed.—The city commissioner of health announced, July 15, the appointment of Dr. Shirley W. Wynne as director of the bureau of hospitals. Dr. Wynne has been acting director of the bureau for the last eighteen months.

Fine for Having Unapproved Milk.—A fine of $100 was imposed, July 15, on the Blum and Doner Corporation, dealers in dairy products, for possessing 1,000 quarts of cream, January 19, which had been obtained from a source not approved by the health department. The firm pleaded guilty.

Use of Cyanid Gas Forbidden.—The health commissioner ordered, July 15, the discontinuance of the use of cyanid gas for extermination purposes, following the death of Isidor Deckowitz last week, which was due to the use of the gas in the next building. The thirty-eight fumigators and exterminators having permits to use cyanid gas will be notified not to use the gas until a definite decision has been reached by the health department.

Child Welfare Society.—The annual report of the New York Society for the Prevention of Cruelty to Children states that complaints to the society during 1924 involved more than 11,000 children, but only 1,669 children were removed to institutions pending disposition of the cases in the courts. The society obtained convictions in more than 76 per cent. of the cases prosecuted. During the year, 2,492 delinquent children were taken to shelters. The average number of children in the society's care each day was 158.

Hospital News.—If present plans mature, only colored persons will be on the house staff at Harlem Hospital four years hence. It is proposed to appoint ten new members yearly each June.——The Institute for the Education of the Blind, opened in 1832, has been pulled down.——A seven story women's dormitory and outpatient building will be erected at Bellevue Hospital at a cost of $2,500,000. It will accommodate 1,050 patients.——The campaign for $200,000 to enlarge the Lutheran Hospital in Brooklyn has been oversubscribed.

Hospital for Actors.—The William Ziegler, Jr., house on East Sixty-Third Street, has been sold for $950,000, it is stated, and will be converted into a hospital for the exclusive use of the theatrical profession. It is planned to erect a four story addition to the mansion. The hospital will have a capacity of 300 beds. Dr. Max S. Rohde of the Lexington Hospital will conduct the institution, which will be open to any reputable physician. The building is five stories high, in Italian renaissance style. The addition, alterations and equipment will involve a total outlay of $2,000,000.

Committee on Dental Service.—A committee on community dental service will be organized by the New York Tuberculosis and Health Association, at the suggestion of the dispensary development committee of the New York Academy of Medicine and with the approval of the New York Oral Hygiene Committee. The objectives will be to acquaint the public through health education with the importance of proper care of the teeth; further the maintenance of standards of dental service in clinics and hospitals, and promote a public opinion that will advance dental prophylaxis among children in the schools.

Physical Defects Among the Poor.—The New York Association for Improving the Condition of the Poor has just completed a study to ascertain the diseases and physical defects which prevail in the dependent families which come under its care throughout the city. It appears that 94 per cent. of the total number of persons in these families have some disease or defect, the outstanding defects being those of nutrition. An "appalling" need of dental corrective work was encountered; 65 per cent. of the children had respiratory defects, including enlarged tonsils and adenoids; 39 per cent. of the adults and 27 per cent. of the children had defective vision.

NORTH CAROLINA

Hospital News.—A new brick, fireproof addition of thirty rooms will be added to the Lincoln Hospital, Lincolnton, increasing the capacity to sixty rooms.

Personal.—Dr. Elizabeth Delia Dixon Carroll, Raleigh, has been reappointed a trustee for the State Home and Industrial School for Women and Girls at Samarcand.——Dr. John J. Abel, professor of pharmacology, Johns Hopkins University Medical Department, recently gave two public lectures on "The Importance of the Apparently Negligible in Biology and Medicine," under the auspices of the North Carolina Chapter of the Society of Sigma Xi.

Society News. — Dr. Franklin Webb Griffith, Asheville, entertained the members of the Buncombe County Medical Society at dinner, July 6, in honor of his guest, Dr. Howard A. Kelly, Baltimore, who is "summering in the mountains" near Asheville.——Dr. Joseph L. Spruill, superintendent, Guilford County Tuberculosis Sanitarium, recently addressed the Iredell-Alexander County Medical Society, Statesville, on "Hospitals for Tuberculosis."

OKLAHOMA

Personal.—Dr. William D. Atkins, Holdenville, has been reappointed superintendent of public health of Hughes County, which position he had held for ten years.

Chiropractor Breaks Patient's Ribs.—The supreme court of Oklahoma recently heard the case of the *Carver Chiropractic College* v. *Armstrong,* in which it appeared that a patient had his eighth and ninth ribs fractured while undergoing treatment at the clinic. The court held, according to the New York *Times,* that a college teaching chiropractic and maintaining a clinic for patients who are treated for a nominal charge is liable for injuries to a person sustained while receiving treatment from a student if they result from negligence or carelessness or lack of ordinary care.

PENNSYLVANIA

Personal.—Dr. John R. Jeppson has been appointed medical director of the Ashland State Hospital at Fountain Springs.——Dr. Granville H. Walker has been appointed chairman of the board of health for Bellevue.——Dr. S. F. McComb has been reelected medical examiner for the Tarentum public school.

Society News.—Dr. Andrew P. D'zmura and Dr. Richard J. Behan, both of Pittsburgh, addressed the Cambria County Medical Society at Johnstown, July 9, on heart disease and cancer, respectively. Dr. G. R. Anderson will address the next meeting of the society, August 13, at Spangler, on "Infantile Paralysis."

Field Psychiatrist Appointed.—Dr. Harold W. Wright, at present consultant of the U. S. Veterans' Bureau, San Francisco, has been appointed field psychiatrist to the bureau of mental health of the Pennsylvania State Department of Welfare. Dr. Wright's new duties will begin, September 1, and be largely concerned with such community activities as mental health clinics.

Philadelphia

Dr. Abbott Returns to McGill.—After two years' service as professor of pathology and bacteriology at the Woman's Medical College of Pennsylvania, Dr. Maude E. S. Abbott has returned to her position on the faculty of McGill University, Montreal, and will be succeeded at the Woman's Medical College by Dr. Helen Ingelby, a graduate of the University of London, who will arrive in September.

Plans to Immunize School Children.—A campaign of public education is to be started by the Division of Child Hygiene, Department of Public Health, so that all school children in the city may be immunized against diphtheria. An increase in the number of cases of diphtheria for the first six months of this year, and an increase of more than 2,000 cases of scarlet fever, according to Dr. Andrew A. Cairns, chief of the bureaus of health and medical inspection, make measures to prevent the future spread of the two diseases among school children imperative. Eleven health centers in the city are working to prevent the spread of diphtheria. Last year the department obtained permission to apply the Schick test to all the parochial school children in the city and virtually all children in Jewish schools.

SOUTH DAKOTA

National Board Certificate Accepted.—According to E. S. Elwood, managing director, National Board of Medical Examiners, candidates holding the certificate of the board will be granted a license to practice medicine without further examination in South Dakota. This makes a total of about thirty-three states, besides Porto Rico and the Canal Zone, which accept the board's certificate.

TEXAS

University News.—The new laboratory building at the University of Texas, Department of Medicine, Galveston, will be ready for occupancy, August 1, and will be formally dedicated in October.

Typhoid at Port Arthur. — Two cases of typhoid were reported in the outbreak, July 10, and two deaths occurred during the previous week. The city health officer said, it is reported, that the peak of the epidemic was reached about three weeks ago, when sixteen cases were reported. There were about twelve cases in the city at the time of this report.

Texas Code Defective.—The Texas code, which goes into effect, September 1, and repeals all other laws at that time, is reported to be defective through an error in omitting Section 11-A of the present code. The section omitted defines conclusive permanent total incapacity under the Workmen's Compensation Act, and unless a special session of the legislature is called, the defect cannot be remedied before the next session of the legislature in January, 1927.

CANADA

Canadian Public Health Association.—At the annual meeting of this association at Montreal, recently, resolutions were adopted that the association go on record as favoring a complete yearly medical examination for every one by his family physician, and that the association request the Canadian Medical Association to prepare model forms for the examinations. A committee appointed to recommend a single method for vaccination against smallpox recommended that a drop of vaccine be placed on the cleansed surface of the arm and that a needle, held at an angle of 15 degrees with the arm, be gently pushed through the vaccine into the top layer of the skin for about one-eight inch, thus drawing no blood. It was also recommended that no pads, plasters or celluloid shields should be applied at any time after vaccination but that a piece of gauze, cotton or linen be fastened to the inside seam of the shirt so that it will hang loosely over the site of the vaccination. Dr. George D. Porter, University of Toronto, Toronto, was elected president of the association; Dr. David A. Clark, Ottawa, and Miss F. M. Shaw, Montreal, vice presidents; Dr. Hamilton C. Cruikshank, Toronto, treasurer, and Dr. John T. Phair, Toronto, secretary. The next annual meeting will be in Toronto.

GENERAL

Gift to Fight Tuberculosis.—The board of directors of the Oregon Health Insurance Company recently voted $1,000 to fight tuberculosis in the Northwest, and sent the money to the state tuberculosis associations of Oregon, Idaho and Washington.

Council of the National Academy of Sciences.—The council has accepted the invitation of the University of Wisconsin to hold the autumn meeting of the academy in Madison, Wis., November 9-11. The chairman of the local committee of arrangements is Prof. Charles K. Leith, Ph.D., University of Wisconsin, Madison.

Journal of Radiology Wins Suit.—The Minnesota Supreme Court rendered a decision, July 11, on appeal in the case of the *Radiological Society of North America* v. *Albert F. Tyler and others,* which sustained the judgment of the lower court. This, it is reported, finally establishes the right of the society to publish its own journal and to the name, the *Journal of Radiology*.

Lye Legislation.—The legislatures of eighteen states have considered during 1925 legislation seeking to regulate the sale of concentrated lye in packages for household use. Colorado, Minnesota, New Hampshire, Nevada, Oregon, Vermont and West Virginia have passed such measures, while in 1923 similar legislation was enacted in Florida and Pennsylvania, and in 1924 in Louisiana, New Jersey and South Carolina. All of the 1925 enactments, except in West Virginia, follow closely the provisions of the model state lye bill.

National Colloid Symposium.—The third national colloid symposium, sponsored by the National Research Council, was held at the University of Minnesota, June 17-19. The 356 persons registered came from thirty different states and four foreign countries, and ninety of them were connected with industrial firms or agencies not directly associated with educational institutions. Prof. Herbert Freundlich of the Kaiser Wilhelm Institute, Berlin-Dahlem, was the guest of honor. There were registrants also from Canada, Hungary and Czechoslovakia.

School for Social Workers.—The Training School for Jewish Social Work was formally opened, July 6, in New York. James E. Russell, LL.D., dean of Teachers' College, Columbia University, gave an address. The course for the pupils will extend over fifteen months, to include two summer periods of three months each at the training school and nine months in cooperation with the New York School of Social Work. Lee K. Frankel, Ph.D., vice president of the Metropolitan Insurance Company, made a plea for increased centralization of social work under state leadership.

Site for Tuberculosis Sanatorium.—The National Tuberculosis Association has published a pamphlet which considers the factors entering into the selection of a site for a tuberculosis sanatorium. It was prepared by Mr. T. B. Kidner, institutional secretary on the staff of the medical service. Among the topics discussed are (1) area required; (2) exposure and topography; (3) the effect of a sanatorium on the value of surrounding property, and (4) water supply. Part 2 is a consideration of plans, with diagrams of several well known sanatoriums. The price of the pamphlet is 25 cents.

Subscriptions to Chemical Abstracts.—The advance subscription blanks sent out by the American Chemical Society to insure the greater part of the expense of publication of a ten year index (1917-1926, inclusive) to chemical abstracts had up to July 1 been signed by less than one third of the 3,000 subscribers considered necessary to insure publication. It is estimated that 7,000 pages of double column fine print will be necessary to index this literature as planned, which will make six large volumes which will serve as a key to practically the whole world's progress in chemistry during a most active period. The first decennial index to chemical abstracts was well supported and has proved its usefulness.

Apparent Increase in Typhoid Fever.—The U. S. Public Health Service has summarized the reports of cases of typhoid fever received during the first half of 1925 and compared them with the same period of last year from the same states and cities. The number of states reporting each week varies from thirty-two to thirty-four, and the total number of cases up to July 1, 1925, was 7,490 as compared with 5,960 for the first half of 1924. In the summary of cases reported from the cities, there were 2,253 cases of typhoid up to July 1, this year, as compared with 1,763 for the same period last year. The number of cities reporting each week varied from ninety-eight to 105. Some of the increase, it is said, is probably due to improvement in reporting. Some increase has been noted in many sections of the country over last year, but the greatest difference in recent weeks has been in the South Atlantic and East South Central states.

Society News.—Dr. Theobald Smith, Princeton, N. J., was elected president of the National Tuberculosis Association at the recent annual meeting in Minneapolis; Drs. Alexius M. Forster, Colorado Springs, Colo., and Henry Longstreet Taylor, St. Paul, vice presidents; Dr. George M. Kober, Washington, D. C., secretary, and Mr. Henry B. Platt, New York, treasurer.——Dr. David R. Lyman, Wallingford, Conn., was elected president of the American Sanatorium Association at its twentieth annual meeting; Dr. Robinson Bosworth, Minneapolis, vice president, and Dr. Walter L. Rathbun, Cassadaga, N. Y., reelected secretary-treasurer.——At the annual meeting of the American Laryngological, Rhinological and Otological Society, at Atlantic City, Dr. John M. Ingersoll, Cleveland, was elected president; Drs. George M. Coates, Philadelphia, Henry H. Briggs, Asheville, N. C., Lloyd A. Schipfer, Bismarck, N. D., Henry B. Lemere, Omaha, and John MacKenzie Brown, Los Angeles, vice presidents; Dr. Ewing W. Day, Pittsburgh, treasurer; Dr. George L. Richards, Fall River, editor, and Dr. Robert L. Loughran, New York, secretary.——At a meeting of the Sioux Valley Medical Association, Sioux Falls, S. D., July 7, Dr. John P. Isaac, Freeman, S. D., was elected president; Drs. Jay M. Crowley, Rock Rapids, Iowa, and Charles O. Wright, Luverne, Minn., vice presidents; Dr. Roy F. Bellaire, Sioux City, Iowa, secretary, reelected, and Dr. Walter R. Brock, Sheldon, Iowa, treasurer.

Dr. Leake in Charge of Gasoline Investigation.—In accordance with plans prepared by the committee to investigate the health hazards of tetra-ethyl gasoline, the U. S. Public Health Service is carrying on chemical and clinical studies in various parts of the country of the manufacture, distribution and use of this gasoline product. Surgeon General Cumming has detailed Dr. J. F. Leake to assume charge of all these investigations and to cooperate with the director of the Hygienic Laboratory and with medical officers of the section of industrial hygiene and sanitation. Two fields of study have been determined on. One of these will be in a Middle Western city where tetra-ethyl lead gasoline has been in use for several years. In this city investigations will also be carried on in an experimental garage where this gasoline has never been used. Identical experiments will also be carried on in an Eastern city. Among other observations to be carefully made in each of these cities are the following:

Clinical observations, including physical examinations of workers in both experimental garages. These examinations have been especially arranged to trace evidence of even the mildest lead poisoning. Blood studies made for stippling will be checked by two medical officers of the U. S. Public Health Service and also by other observers who have had long experience with these blood changes.

Chemical observations will also be made of stools and urine of all employees in these garages for evidence of lead poisoning, following a technic approved by the committee. Each chemical analysis will be checked by two groups of chemists; and, from time to time, the results of both groups will be checked by outside agencies. The next meeting of the committee is scheduled to be held in October, at which time the investigations of the U. S. Public Health Service will be presented to the committee.

LATIN AMERICA

Prevalent Diseases in Venezuela.—According to the Department of Commerce, the most frequent causes of death in Venezuela in 1923 were malaria, 6,417 deaths; pulmonary tuberculosis, 3,968; grip, 3,019; pneumonia, 2,920, and dysentery, 2,563.

FOREIGN

Bubonic Plague in Russia. — Forty-three deaths from bubonic plague have been reported in southeast Russia since the outbreak of the epidemic last month. Eighteen communities in the Upper and Lower Volga regions have been affected thus far.

Anonymous Gift. — The *Lancet* notes that an anonymous Wakefield man, now resident in the United States, has promised to provide a new outpatient department at the Clayton Hospital, Wakefield. Last year there were nearly 40,000 attendances at the outpatient department of this hospital, and the existing accommodations are "entirely inadequate."

British Journal of Pediatrics.—The Council of the British Medical Association, at its meeting, June 10, in London, agreed that it was desirable for the association, in the interests of the progress of medicine, to inaugurate a journal for the publication of what is best in the British school of children's diseases. Therefore, it has arranged for the publication monthly by the association of such a journal, which will be directed editorially by a committee of pediatricians who are members of the association. The editor of the *British Medical Journal* is also to be a member of the editorial board.

Medical Work in Palestine.—At the annual convention of Hadassah, Washington, D. C., July 1, it was reported that in the last three years nearly $1,000,000 has been raised in America for medical work in Palestine, which includes work in hospitals, infant welfare work and the care of orphans. A tuberculosis sanatorium will be established at Safed with funds collected by the Hadassah organization of Canada, and a hospital will be built in Tiberias with funds donated by

Mrs. Peter J. Schwaeltzer, New York. It was stated that trachoma has decreased from 80 per cent. to 12 per cent. in many districts in Palestine and that in some cities it has practically disappeared.

London Ambulance Service.—In a recent report to the London County Council, it was noted that in the year ending March 31, the ambulance service dealth with 31,700 ambulance calls, of which 5,000 were between the hours of 11:30 p. m. and 7:30 a. m. The average time taken to reach a case was 7.4 minutes. During the busy time, on week days, thirteen ambulances were in service. It was proposed to put in continuous commission, July 1, 1925, three new ambulance stations which heretofore had been closed during certain hours of the night and on Sundays. The highest number of calls (161) ever recorded in a single day was on a recent Saturday. Ambulance calls are most frequent in July.

One Hundred Years in One Building.—The Royal College of Physicians held a *conversazione* in London, June 25, to celebrate the centenary of the occupation of the present building of the college. The guests were received by the president, Sir Humphry D. Rolleston, and Lady Rolleston. A historical note was attached to the program, stating that the Royal College of Physicians was founded by Thomas Linacre, and the charter was dated Sept. 23, 1518. Certain powers for the purpose of controlling those who practiced medicine in the city of London and seven miles around were granted to the college. Later charters extended these powers so that authority was exercised over all those who practiced in England except the doctors of medicine of Oxford and Cambridge universities. The first meetings of the college were held in Linacre's house in Knightrider's-Street. He was the first president.

International Child Welfare Congress.—Under the auspices of the Swiss federal government, a conference will be held in Geneva, August 24-28, to discuss the problems affecting the welfare of the child. The *World's Health* says that there will be three different sections, the first one considering in part a comparison of the measures adopted in different countries to reduce infant mortality, including prenatal mortality, the proper feeding of infants and school children, the sun treatment for children and the prevention of disease. The second section will consider the relation of such social questions to the child as the protection of girl mothers, widows and abandoned mothers and their children, the care of orphans, mental deficiency, and the care of immigrant and alien children. The third section will study the best means of arousing public opinion to a greater sense of responsibilty for the welfare of the child, and will encourage the education of the child himself in ideals of peace and brotherhood.

Deaths in Other Countries

Dr. **Charles Février**, formerly médecin inspecteur général, a director of the service de santé, and president of the Comité de Santé, at Paris.——Major General Sir **Henry Neville Thompson** of the Royal Army Medical Corps at Osborne, June 21, aged 64.

Government Services

Government Investigates "The National Health Service"

Treasury Department officials at Washington are giving attention to the activities of an organization which designates itself as "The National Health Service" with headquarters in the Munsey Building, Washington, D. C., and offices also at 17 West Sixtieth Street, New York. It is alleged that this organization through its lecturers and its publications has been attempting to convey the impression that the "National Health Service Bureau" is a part of the federal government, and to confuse, in the minds of the public, the title of this organization with the U. S. Public Health Service. One Harry H. Balkan, who represents himself to be a physician, is active in the field as a representative of this organization. In certain cities he has come in contact with physicians who were former officers of the U. S. Public Health Service and in some instances has succeeded in conveying to them the impression that he is an officer of the Public Health Service. In Boston, through the efforts of a former officer of the U. S. Public Health Service, a police order was issued forbidding Balkan from giving the so-called health talks on the streets of that city. Considerable quantities of mail apparently intended for the "National Health Service," Munsey Building, Washington, D. C., have been delivered to the U. S. Public Health Service.

A volume entitled "Book of Health" by Balkan gives the appearance of additional attempts to confuse his organization with the U. S. Public Health Service. The words "National Health Service Bureau" appear on the cover, and the words "The National Health Service" appear on the title page in the copyright notice and with such frequency throughout the book that it is apparently the intention of the writer to fix in the mind of the reader the Public Health Service.

On page 7 (Preface) appears the following:

> A vast number of books have been published on health, and the United States Government through its Health Service Bureau has printed many helpful bulletins and reports on nearly every phase of illness, etc., etc. . . .
>
> The National Health Service has therefore undertaken to put in plain language, which everyone can understand, and in a condensed form, in this volume, all the essential facts which everyone should know relating to health and body building. . . .

The deception of this book is further augmented on page 15:

> It may not be generally known that the United States Government has devoted much study and research to the nutritive values of food, by its own scientific experts. It has acquired much valuable data through the most exhaustive research work into the nutritive values of food. . . .

There is here an evident desire to capitalize the research work done by the U. S. Public Health Service; and, by innuendo, to mislead the average reader into believing that "The National Health Service," if not itself responsible for this research work, is at least prepared to give the buyer of the book especial advantages in receiving through the "Book of Health" authoritative information. It is apparent that the prestige of the federal government and the achievements of the U. S. Public Health Service are being capitalized by an unscrupulous agency to sell a book which is not officially sponsored. It is understood that the Department of Justice has ordered an investigation to ascertain whether or not the facts warrant criminal prosecution. There is an "H. H. Balkin" listed in the 1924 Boston telephone directory as a "character analyst," but no such name spelled either with "a" or "i" appears in the American Medical Directory.

The "National Health Service" has recently approached members of the National Health Council with various offers of cooperation, and in a letter stated that they cooperate with the "U. S. Public Health Service, the Carnegie Foundation, the Rockefeller Institute, and all social service organizations with the highest ideals." The Carnegie Foundation and the Rockefeller Foundation, however, declare that they never heard of the concern. An individual, giving his name as Dr. Leonard Keene Hirshberg, is said to have recently represented himself as the "physician-in-chief" of the "National Health Service." Hirshberg, according to the daily press, was convicted, May 11, 1924, of using the mails to defraud and sentenced to four years in the Atlanta penitentiary. More than twelve years ago, Hirshberg was a member of the American Medical Association, and in 1913 the Board of Censors of the Baltimore Medical Society attempted to oust him from their organization. Hirshberg obtained a court order, however, declaring that the Board of Censors should proceed no further. Hirshberg then resigned.

Army Personals

Lieut. Col. Robert U. Patterson has been directed to proceed, about October 1, from duty in the Surgeon General's Office to Hot Springs, Ark., and assume command of the Army and Navy General Hospital.——Lieut. Col. Robert M. Blanchard will sail about October 28 from New York City for Hawaii for duty.——Major Coleridge L. Beavan will be relieved from duty at Fitzsimons General Hospital, Denver, about September 1, and will proceed to Fort Riley, Kan., for duty.——The assignment of Contract Surg. Peter J. Fagan to duty at Fort Tildon, N. Y., is announced.——Lieut. Col. Howard H. Baily, Major Joseph W. Bauman and Capt. Kirk P. Mason have been ordered to duty at Fort William McKinley in Manila, P. I.——That part of special order 154, War Department, July 1, announcing the acceptance of the resignation of Major Charles C. Hillman has been revoked.——Major Albert B. McKee has been ordered from the Fitzsimons General Hospital, Denver, to Fort McDowell, Calif., for duty.——Major Omar H. Quade will sail from New York, about October 28, for San Francisco for duty at the Letterman General Hospital.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 4, 1925.

Proposed Medicolegal Institute for London

At the annual meeting of the Medico-Legal Institute for London, a discussion took place on the establishment in the metropolis of a medicolegal institute. Lord Justice Atkin, the president, said that no more important meeting had ever been held by the society, nor could a proposal of greater seriousness be put forward. It was almost incredible to see how little provision was made in this great city for medicolegal research and teaching of any serious nature, in which lack London probably stood alone among the greater centers of the world. There was no central institute, laboratory or museum on such subjects. He fully realized that the medical schools were doing all they could, according to their resources. Though the country had been fortunate enough from time to time to have two or three eminent experts, on whom reliance could be placed, it was unfortunate that there had been no institute which would secure the general education of a sufficient number of people in the highest branches of medicolegal work. The need for this organized special training was even greater for defense than for prosecution in order to arrive at the real truth.

Sir Bernard Spilsbury said that the arrangements for skilled pathologic examination were far from perfect, and the records of cases of importance and of researches carried out in connection with them were nowhere collected or registered so as to be available for study. The staff of such an institute could be consulted confidentially in any suspicious case by physicians and by coroners, or by the police. Organized teaching in medical jurisprudence had been given at Edinburgh from the beginning of the nineteenth century. In London those who collected specimens reserved them for teaching in their own schools, and the number of such specimens had always been inadequate. Yet London presented an immense field of material. In a few years, great headway could be made and systematic postgraduate teaching on the subject could be given; and it would become very important for any applicant for the post of police surgeon to have had the benefit of such a course. There was great need for research into medicolegal problems, such as postmortem changes, and the teaching of chemistry and bacteriology was at present in a very unsatisfactory condition. With such a proposed institute available, bodies on which inquiries were to be made could be preserved in cold storage, to prevent postmortem changes taking place in the meantime, before the judicial trial was held.

Sir William Willcox said that medicolegal teaching in London was much decentralized: ten medical schools were teaching forensic medicine, which meant a wasteful repetition of the same course. One of the great advantages of such an institute would be to enable police surgeons to have training, as they were usually the first to see the body in cases of alleged suicide or murder. Even when such an institute was established, the delicate and careful investigations necessary when a life was at stake could not be carried out in the presence of a class of students. The institute would also be of the greatest value to the coroners of the metropolis.

A resolution expressing approval of the proposal was carried unanimously.

War Pensions

The aggregate expenditure on war pensions since 1917, including funds voted in parliament for use this year, will amount to almost enough to pay off the whole of the prewar national debt. The grant this year amounted to $330,000,000, a decrease of about $14,290,000, or 4 per cent., on the previous year. The expenditure of the past year was $344,415,000, a fall on the previous year of $16,125,000. The estimated reduction, therefore, this year was less than the actual reduction last year. The broad fact governing expenditure in regard to war pensions is that, while the annual expenditure is becoming more stable, the liability is becoming less. The principal items are administration, medical treatment and the pensions themselves. In each item there is some decrease, and proportionately the largest decrease is in the items of administration and medical expenses, being a total of 16 per cent., against 3 per cent. for pensions and allowances to pensioners. Administration will cost $13,333,000, a decrease of 12 per cent. The largest item in the expenditure is for pensions and allowances. The cash payments to all individual pensioners will amount for the year 1925-1926 to $302,500,000. This, compared with a sum of $311,700,000 in 1924-1925 and with $324,000,000 in 1923-1924, shows that the reduction this year is less than the reduction last year. The chief items in this aggregate are: $163,500,000 for pensions and allowances to officers, nurses and men; $99,000,000 for pensions to widows of officers and men and their children, and $38,600,000 for pensions and allowances to other adult dependents of deceased officers and men. In all, more than 2,000,000 persons, men, women and children, are at present receiving compensations. The expenditure on pensions and allowances is diminishing slightly. In the present year the decrease amounts to about 2.5 per cent. Factors making for increase of expenditure are the new claims for compensation and the increased rates of compensation given to persons whose condition from time to time is found to be growing worse. New claims from men are coming in at the rate of more than 600 a week. This large number is partly due to the fact that the ministry has taken special steps to advertise the necessity for making claims within the time limit allowed —seven years from the date of the man's discharge. The factors of increase and decrease are: 1. The death rate among disabled men remained fairly stationary at about 13 per thousand annually; a rate about the same as that of the general population. 2. The number of children passing the normal pension limit of 16 is an increasing factor. At present this number is about 3,000 a month. 3. The number of cases in which there is an improvement in the condition of disability warranting a reduction in the rate of compensation is necessarily a diminishing factor, because final awards have been made in most of these cases already. Last year in not more than 17 per cent. of the cases examined was there any reduction in pension. This compares with an average of 26 per cent. who received an increase. The pension list shows at present, so far as regarded officers and men, a total of 615,000 officers and men. Of these more than half have already received final awards and are relieved of the trouble of medical reexamination and of the uncertainty as to their pension future. The remainder are still on what was called the conditional list. Their pensions are subject to periodic review. 4. The remaining classes of pensioners are widows and their children and adult dependents. The estimated cost of those pensions and allowances will be in the aggregate $137,795,000 for 1925-1926, as compared with $142,625,000 in 1924-1925. The factors that make for increase were slightly more than balanced by the inevitable decline in numbers. New claims are being admitted at the average rate of 120 a week, and there is the further additional cost involved by the automatic increase of the widows' pension at the age of 40. On the other hand, factors making for decrease are the remarriage of widows, deaths and children passing beyond the age of dependence and, therefore, ceasing to draw allowances. The number of pensioners represented by this expenditure will be approximately 508,000 widows and adult dependents, and, in addition, 303,000 children.

An Attack on the Freudians

In his Maudsley Lecture on "Mind and Brain," delivered before the Medico-Psychological Association of Great Britain and Ireland, Dr. Joseph Shaw Bolton, professor of mental diseases in the University of Leeds, began with an analysis of the minds of insects, birds and mammals, and adduced evidence against the views advanced by William McDougall in his well known "Outline of Psychology." The "anthropization" of insects and birds — i. e., the reading into their behavior of the motives of men acting in the same way—was to be deprecated. They are merely machines, so far as the power of purposive action is concerned. They obey instincts blindly and uncomprehendingly, and their apparent wisdom is an illusion. With the mammals, purposive action begins to declare itself, though Dr. Bolton dismissed many of the great claims made on behalf of the dog. Human intelligence, too, is still in a very primitive state. When we consider the ancient mechanical caricature of voluntary thought which exists in the arthropods and the birds and compare it with many aspects of human activity, we are irresistibly impelled, not to the idea that the lower animals think, but to the certainty that human beings in the mass do not. Fortunately for us, our recent origin, and the highly plastic state of our constituent parts which we inherit from our prehuman mammalian ancestry, will in the long run prove our salvation by enabling us rapidly to evolve from our present relatively infantile stage of mental development. In fact, instead of expressing concern at the small percentage of mental deficiency and dementia which we find among us, we should rather feel regret that it is not larger. The greater the rapidity of our evolution and the plasticity of our higher organs, the more numerous naturally are the variations above and below the average—the more common must be individual genius and individual mental deficiency and dementia. Dr. Bolton considered personality the intellectual element of mind or cerebral function, which exists in inverse proportion to the instinctive element common to mammals and to animals below them. Education and training are to evolve reasoned purposeful action in place of instinctive reaction to environment. In the many, this purpose is still served but inadequately. This, however, is merely the consequence of racial immaturity, and is no reason for the retrograde enthroning of the basal instincts, which serves as the foundation stone of freudian psychology. Rather should we hold fast to the lesson taught by the history of our race, and regard the evolution of the basal instincts into emotions and sentiments, and finally the moral sense, as a natural evolution from a lower to a higher form. Dr. Bolton considered these remarks particularly needed at the present time when we are threatened with an exacerbation of world hysteria by the discovery of "the myth of the unconscious mind." This extraordinary conception is based on Freud's theory of dream interpretation. No two dream analysts are likely to hit on the same interpretation, though, like palmists, they will naturally please their clients. Does any one know what the unconscious mind is? "So far as my reading goes, I have not come across a definition, and I cannot imagine any definition that would not be utterly contradicted by the considerations on mind and brain which I have laid before you. The unconscious mind must exist fully formed before sensoripsychomotor experience has been acquired, and even before the necessary cerebral structure for such functions has been evolved, because analyses extending back into the days when the patient was in his mother's womb are a heroic undertaking. No one can analyze what is not. The unconscious mind seems truly to be a dreadful entity to be possessed of. It possesses unfathomable depths, as may be instanced the castration complex. This complex, if it be discoverable at all, is apt to be so deeply buried that the patient is cured, or discontinues treatment, before we have disinterred it. The unconscious mind possesses abominable mechanisms unworthy even of its discoverer, whose theory of the Oedipus complex has supplied the energy which has driven Freud's triumphal car round the world."

BELGIUM

(From Our Regular Correspondent)

July 1, 1925.

Death of Dr. Antoine Depage

Dr. Antoine Depage has died after a long illness. His funeral was attended by representatives of the king and queen and by all the scientific bodies of the nation. Many foreign delegations brought expressions of sympathy, particularly from the Academy of Medicine of Paris, the French army and the Société nationale de chirurgie de Paris.

The immense services that Depage rendered the allied armies during the war by providing the Belgian front with model field hospitals were characteristic of his extraordinary creative and organizing genius, and immediately placed him in the front rank of military surgery. His ambulance de l'Océan at La Panne became a model not only for war hospitals in Belgium but also for other armies. Many foreign inspectors came to visit it, and the French government, at the instance of M. Justin Godart, undersecretary of state for the Service de Santé, sent groups of military physicians to be instructed in the Carrel method of treating war wounds. It was also Depage who, together with his friend Tuffier, induced the allied governments to establish at Paris an interallied surgical conference. The great work accomplished by this conference and the far-reaching influence that it had on the evolution of modern war surgery are well known.

But, in addition to the marvelous energy and organizing ability that he displayed during the war, he has been a great factor during the subsequent years of peace in his capacity of scientist, surgeon and organizer. As professor of surgery at the Faculté de médecine of Brussels, he emphasized the need of close collaboration between the laboratory and the clinic. Investigations in the fields of histology and bacteriology were especially dear to him. His publications were always of excellent quality, from his first work on tuberculosis of the bones down to his unique conceptions of treatment of cancer of the breast.

Called, after the armistice, to the presidency of the Red Cross of Belgium, he became, about the same time, the secretary of the international league of Red Cross societies. He reorganized and put new life into the Red Cross of Belgium, of which organization the significance and true scope had never been fully understood. He made of it a national institution whose rôle in time of peace is scarcely surpassed by its services in time of war and other public calamities. It was he, too, who practically created in Belgium the profession of nursing. In this field he found an exceedingly able assistant in the person of his wife, Madame Marie Depage, who lost her life on the *Lusitania*. In advance of any government action, they, working together, founded the first school of graduate nurses, which revolutionized conditions affecting the care of patients. He was also one of the chief promoters of the Société internationale de chirurgie. In 1914 he was honored with the presidency of the congress held that year in New York.

Depage was characterized by complete self-abnegation. He was always animated by the purest patriotism and a most ardent love for humanity, as is evidenced also by his nouncements before the Belgian senate. His conceptions of political and social reforms were the immediate outgrowth of the scientific training and mode of thought that he derived from his profession. M. Devèze, former minister of war, has described Depage's recommendations for social reform: "He regarded the abolition of tariff walls as the necessary prelude to the substitution of a world economy for the narrower national economic conceptions, the second step toward this goal being the development and the improvement of means of transportation in order to annihilate distances and bring the countries of the world more closely together."

Belgium has certainly lost a great citizen. A group of colleagues, pupils and friends has decided to erect at Brussels a fitting memorial in honor of this great master and to create a scientific foundation worthy of his personality. Under the patronage of her majesty the queen, a memorial committee and an executive committee have been appointed.

The Antivenereal Campaign

Immediately after the armistice, the government adopted special measures to combat the spread of venereal affections. The government's intervention was supposed to terminate when the conditions that called it forth had been remedied. At present, not only is the situation normal but it has taken on a more favorable aspect than before the war. That is true especially of syphilis. According to statistics furnished by the public health administration, the number of syphilitic persons, in proportion to the population, treated at the expense of the state was 0.13 per cent. in 1920 and 1921. In 1922 it had dropped to 0.10 per cent.; in 1923 to 0.09 per cent., and in 1924 to 0.06 per cent. The number of patients who were in the primary stage, in relation to the total number of syphilitic patients treated, was around 25 per cent. in 1919 and in 1920, and dropped to 20.41 per cent. in 1921, to 17.24 per cent. in 1922, to 12.33 per cent. in 1923, and to 6.07 per cent. in 1924. In view of these results, the government recently asked the Conseil supérieur d'hygiène whether it would not be well, with respect to the medical profession, to return to the status quo ante bellum. In conformity with the opinion rendered by the council, the minister of health has issued the following proclamation:

1. The intervention of the state in assuming the expense of treatment for gonorrhea will end with Oct. 1, 1925, both as to the remuneration of the medical personnel and as to the supplying of gratuitous antigonorrheal remedies. This decision will have as a consequence the suppression of official control of antigonococcal vaccines.

2. The right to treat syphilitic patients at the expense of the state will be restricted, on and after Jan. 1, 1926, to certain selected antivenereal dispensaries.

3. Parasyphilitic patients, tabetic patients during the stage of ataxia, and patients with general paralysis, who are within reach of hospitals or asylums for incurables, and patients with mental disease will no longer be given free treatment at the expense of the state, unless it is a question of atypical cases and there is reason to fear the appearance of contagious manifestations. For the application of this exception, the central administration will rely on the judgment of selected physicians and their devotion to the public interest.

Traumatism in Relation to Tuberculosis

Addressing the Société belge de médecine et de chirurgie des accidents du travail, Dr. Delchef took up again the rôle of traumatism in the genesis of local and general tuberculosis. In industrial accidents, too great influence is often ascribed to traumatism in connection with tuberculosis of the bones and joints. The injured person is usually acting in good faith, but the injury to which he refers his condition is the consequence and not the cause of the arthritis. A careful investigation of each case, a detailed inquiry into the precise circumstances of the accident, an early roentgenologic examination, showing possibly at the time of the traumatism an appreciable lesion, will enable one to straighten out the error. After studying the various modes of infection, transmission and generalization of tuberculosis, the author concludes that: (1) as for an open traumatism being the entire and exclusive cause of a tuberculous infection; (2) as for an open traumatism being a cause but not the exclusive cause of a tuberculous infection if the wound caused by the traumatism becomes infected secondarily; (3) as to the revealing or exacerbating rôle, as the case may be, of a traumatism superimposed on a tuberculous lesion, and (4) as to the possible generalizing effect of a traumatism, it may be affirmed that the traumatism does not produce a local tuberculosis. Just at this time when a new insurance law pertaining to sickness and invalidity is being discussed, the Société de médecine et de chirurgie des accidents du travail suggests that it would be opportune to point out to the legislators that persons affected with tuberculosis following a traumatism are, in the vast majority of cases, the victims of the disease and are not suffering from an accident of labor.

Divorce as Affecting Persons with Mental Disease

Following the reception of the communication from Dr. Ley, the gist of which I gave in a recent letter (The Journal, June 6, 1925, p. 1760), the Société belge de médecine mentale passed the subjoined resolution:

1. From the assemblage of facts brought out in connection with the general discussion, it is apparent that there is no scientifically sound argument to be adduced to justify the dissolution of marriage because of the presence of mental disease in one spouse. The psychiatrists demand that legislators shall cease to consider their patients as exceptional beings and shall restore them to their full rights as set forth in the common law.

2. There is at present no accurate rule or method for the determination of the curability of mental diseases in general. The criterion of the duration of the condition is notoriously indaquate, and the establishment of a term fixed by law would constitute in many cases a flagrant injustice.

3. Medical alienists, familiar with the complexity of the medicolegal problems encountered in their practice, hold that no inviolable rule can be set up, and that only an individual and thorough examination in each case will enable an alienist to form an opinion in regard to the curability of the affection and as to whether a patient when he (or she) recovered from an existing mental disease would be harmfully affected by the train of emotions awakened by the fact that his (or her) spouse had secured a divorce.

4. It is important that the question of the powers of the administrator appointed to protect the interests of the patient be very carefully considered; his powers should be comprehensive in order to assure the protection of the patient's rights.

5. Every patient who becomes a party to a divorce suit should be examined by a board consisting of at least three experts, one the medical director of the institution in which the patient is confined, the two others to be medical specialists in psychiatry.

Aneurysms of the Aorta

Speaking before the Cercle médical of Antwerp recently, Dr. De Groodt presented a comprehensive study on the multiplicity, the development and the mode of rupture of aneurysms of the aorta. Rupture occurs usually at the proximal end, which seems paradoxical. In the sac one often finds a hardened thrombus capable of perforating the wall. It is well to avoid doing anything that favors the production of thrombi, and De Groodt condemns methods of wiring. Among the specimens presented with this communication was an aneurysm of a sinus of Valsalva giving rise to a rupture of the left auricle, which is said to be only the second case of the kind reported in the literature.

The Population of Belgium

The *Moniteur* publishes an official report on the population of Belgium, which is placed at about 7,750,000. The increase in the population is essentially the same as during the years before the war, or at least since 1905. From 1895 to 1905, the annual increase in population amounted to approximately 100,000. Previous to 1895, and going back to 1880, we find an annual increase of from sixty to seventy thousand. In 1880 the population of Belgium was only 5,500,000. The excess of births over deaths in 1924 was less than the average for the ten years immediately preceding the war, which was about 63,000. The total number of births for 1924 was 151,000, which is less than that of any year since 1860. From 1904 to 1913, the average number of births was 180,000. The total number of births decreased from 1904 (191,000) to 1913 (171,000). In 1901, the total births were 200,000. The recent report gives 97,000 deaths for 1924, which denotes considerable decrease over the figures for the prewar years. In 1924, immigration brought in 51,000 new inhabitants. The total number of emigrants amounted to 31,000.

ITALY

(From Our Regular Correspondent)

June 24, 1925.

The First National Antituberculosis Congress

The first National Antituberculosis Congress was recently held in Naples, under the chairmanship of Professor Ferrannini. Delegates from all the provinces of Italy attended, and each discussed the conditions in his own province as they affected the problem of tuberculosis. The delegate of Milan described the organization of the campaign in his province. A *consorzio*, or federation, covers nineteen local dispensaries, each of which is responsible for the service in its own zone. The end of last year the federation was established on a permanent footing and was guaranteed an appropriation of 0.28 lira per inhabitant. The center of operations in each circle or district, which contains approximately 160,000 inhabitants, is the prophylactic dispensary, aided by a local sanatorium for grave cases and provided with an ambulatory service. In addition, every district dispensary has at its disposal a certain number of beds in the Sanatorio di Quasso al Monte and in the Istituto elioterapico di Santa Corona. A new tuberculosis sanatorium is being erected and will soon be opened to patients.

The Opera nazionale per gli invalidi di guerra and the Sezione di Roma dell'Associazione fra tubercolotici di guerra gave interesting reports of their work.

Comprehensive discussions were devoted to the modern methods of research—to early diagnosis, serodiagnosis, and to the various methods of treatment: by vaccines, the roentgen ray and light.

The congress passed a resolution recommending the creation of a national antituberculosis society, to be financed by the chief banking institutions, whose duty it would be to coordinate the various forms of prophylaxis and aid to the tuberculous and to provide for the equal distribution of funds from the various provinces of Italy. This would do away with the dissipation of funds and would insure a more equal organization of the prophylactic services. Special provisions were also made for the children of tuberculous soldiers.

Celebration in Honor of Guido Banti

Memorial services in honor of Prof. Guido Banti were held recently in the *aula magna* of the University of Florence. A large number of physicians and students, for the most part pupils of the eminent master, were present. Senator Lustig, who is, at the same time, director of the university institute of pathology, gave an address, in which he referred with enthusiastic praise to Banti's manifold activities: his work in the clinics, his works on pathology, and, above all, his anatomicopathologic researches, which had carried his fame to every land. He emphasized especially his meritorious services in blood diseases and more particularly in the study of the disease that bears his name, for which he had proposed also the most effective remedy: splenectomy.

University Summer Courses for Foreigners

There has been presented to Mussolini, in his capacity of minister of foreign affairs, a project looking toward the establishment in Perugia of university summer courses for foreigners. This would be the first summer school of the kind to be founded in Italy. The project has been kindly received by Mussolini.

BERLIN

(From Our Regular Correspondent)

July 4, 1925.

Draft of a Law Pertaining to the Combating of Venereal Diseases

The draft of a law to combat venereal diseases has been presented to the Reichstag. The essential provisions are as follows:

Any one who has knowledge of the fact or, from the circumstances, would be compelled to assume that he is affected with a venereal disease that is infectious must allow himself to be treated by a physician licensed to practice in Germany. Parents and guardians must provide medical treatment for those under their care who are suffering from venereal diseases.

The board of health having jurisdiction may compel persons who are strongly suspected of having a venereal disease and of exposing others to infection to present a health certicate endorsed by an officially appointed physician or to submit to an examination by such physician. At the request of the examining physician, such persons may be required to procure and present such certificates at regular intervals.

Persons who are affected with a venereal disease and are suspected of exposing others to infection may be compelled to submit to treatment and may be interned in a hospital if this course seems necessary to prevent the spread of the disease.

In case other means are not sufficient to secure the application of the therapeutic measures provided, the use of direct force is admissible. Medical interventions that are associated with a serious danger to life or health may not be resorted to without the consent of the patient. The federal government may determine what medical interventions come under this category.

Any person who indulges in sexual intercourse although he has knowledge of the fact or, from the circumstances, would be compelled to assume that he is affected with a venereal disease which is infectious will be sentenced to prison for a period up to three years, unless, according to the penal code, a more severe penalty is imposable.

If it is a question of sexual union between husband and wife or persons duly affianced, prosecution will be brought only on demand. Prosecution may not be brought after the lapse of six months.

Any person who, in spite of the fact that he knows or, from the circumstances, would be compelled to assume that he is affected with a venereal disease which is infectious, contracts a marriage without having informed his future spouse of his diseased condition, will receive a prison sentence for a period up to three years.

Prosecution will ensue only on demand and may not be brought after six months.

The treatment of venereal diseases and diseases of the generative organs may be given only by physicians duly licensed to practice in Germany. Treatment that is not based on a personal examination of the patient is prohibited.

Any person who, contrary to these provisions, treats a patient or offers his services for such treatment either publicly or by the circulation of pamphlets, illustrations or other representations, even though in a veiled form, will be sentenced to prison up to one year, or a fine will be imposed.

A physician who examines or treats a person affected with a venereal disease shall inform the patient in regard to the nature of the disease, the danger from infection, and the penalties that await violators of the provisions of this act. He shall also deliver to such person an officially approved leaflet on the subject.

If the patient, for any reason, lacks the necessary understanding to comprehend the danger from infection, the required verbal instruction and the leaflet shall be given to the person who is responsible for the patient.

The physician shall report to the competent board of health any patient with infectious venereal disease who interrupts treatment or observation, or endangers others by reason of his occupation or his personal relations.

The controlling authorities in any province may provide that this report must be delivered to a consultation center for venereal diseases, instead of to the board of health. If the patient does not comply with the instructions of the consultation center, the latter must inform the board of health.

Any official or employee of a board of health or a consultation center who unlawfully reveals what has become known to him, through his official capacity, concerning the venereal diseases of another or in regard to their cause or as to any other personal affairs of the persons who are involved will become subject to a fine or to imprisonment up to one year.

Prosecution will be brought only on demand. The board of health is hereby empowered to make such demand.

A revelation is not unlawful if it is made by a physician serving on a board of health or in a consultation center, or with the consent of such a physician, to a board or to a person that is entitled, for reasons of public health, to receive information in regard to the presence of venereal disease in the person affected.

Any person who publicly or by the circulation of pamphlets, illustrations or other representations, even though in a veiled form, offers for sale or recommends remedies, articles or methods for the cure or relief of venereal diseases, or exhibits such remedies or articles in a public place, will be subject to a prison sentence up to six months or to a fine, or both.

Exempt from punishment, unless other federal or provincial laws are thereby violated, is the announcement or recommendation of such remedies or articles to physicians or pharmacists, or to persons who carry on a legitimate trade in such remedies or articles, or in scientific medical or pharmaceutical journals.

The federal government may make the marketing of articles that are alleged to aid in the prevention of venereal diseases subject to the results of an official test, and may prohibit the marketing of unsuitable articles. It may also pass regulations concerning the exhibition, advertising or recommendation of articles thus approved.

Any person who markets articles that have been excluded from commerce will be subject to a prison sentence up to six months or a fine, or both. Likewise, any person who acts in contravention of the provisions of Paragraph 1, Section 2, will be subject to punishment.

Special penalties may be imposed in certain cases on: (1) a woman who nurses the child of another in spite of the fact that she knows, or, in the nature of the circumstances, is compelled to assume, that she is suffering from a venereal disease; (2) any person who allows a syphilitic child, for whose care he is responsible, to be nursed by any other person than the mother, in spite of the fact that he knows of the disease of the child or, in the nature of the circumstances, must assume its condition to be such; (3) any person who allows a child with any venereal disease other than syphilis, for whose care he is responsible, to be nursed by any other person than the mother, without first having a physician give her verbal instruction in regard to the disease and to the precautions to be taken, in spite of the fact that he knows of the disease of the child or, in the nature of the circumstances, must assume its condition to be such; (4) any person who places a child affected with a venereal disease in charge of foster parents without informing them of the child's true condition, in spite of the fact that he knows of the disease of the child or, in the nature of the circumstances, must assume its condition to be such.

Exempt from punishment is the nursing of a syphilitic child, or allowing a syphilitic child to be nursed by a woman who is affected with syphilis.

A fine up to 150 gold marks or a prison sentence will be the punishment of (1) a wetnurse who nurses the child of another without procuring a recent medical certificate showing that she is not affected with any venereal disease; (2) any person who employs a wetnurse for a child without first assuring himself or herself that the nurse so employed holds the certificate; (3) any person who allows a child for whose care he or she is responsible to be nursed by any other person than the mother without having first consulted a physician.

The penal code is hereby modified as follows:

As a pander or procurer will be regarded, more particularly, the keeper of a brothel or of a brothel-like establishment.

Any one who provides a home for a person who is more than 18 years old will not be subject to punishment unless the person for whom the home is provided is exploited in some manner or is urged or compelled to become unchaste.

Any person who habitually, for the purpose of gain, leads an unchaste life in the vicinity of churches, schools or other establishments frequented by children or juveniles; or in a dwelling in which children or juveniles between the ages of 4 and 18 reside, or in a commune with less than 10,000 inhabitants, for which the controlling provincial authorities have established regulations for the protection of childhood and in behalf of public decency, shall be subject to prosecution.

Injuries Resulting from the Radiotelephone

In an item in the *Münchener medizinische Wochenschrift*, Dr. S. Jellinek of Vienna recites: While the user of a radiotelephone had the head receiver still adjusted, he reached out his hand to turn out an electric table lamp. The switch being of brass and the insulation defective, he became connected in a circuit of 220 volts, and only the chance entrance of his daughter at that moment saved him from a serious accident. His predicament arose because the switch was not made of nonconducting material and the radiotelephone was grounded in the lighting system. When a head phone is adjusted, it is advisable to avoid touching any object that is connected with the wiring system. The connected apparatus in itself presents no danger, but it may become dangerous if the table lamp is touched. A key switch should never be of brass. A further danger lies in using a radiotelephone during a thunder storm. The writer recalled also the fact that Rychmanns, who, coincident with Benjamin Franklin's discoveries, was studying electricity of the open air, was fatally injured when he allowed sparks generated between two poles during a thunder storm to pass to his hand. The wounds that result on these occasions resemble burns caused by invisible rays.

Results of Cancer Research

In essentially the same manner as the researches of Professor Warburg, to which I referred in a recent letter, Dr. Biering, the director of the Hamburg institute for cancer research, is studying the physicochemical aspects of the genesis of malignant tumors. As he set forth, a few weeks ago, in an address delivered at the Hamburg institute, his chief endeavor was to establish under what conditions the proliferation of cancer cells in normal tissues occurs. The way for proliferation is prepared by the lactic acid that is eliminated by the cancer cells, and penetrates the adjacent tissues and destroys them by withdrawing or dispelling important constructive elements. Not until this penetration and destruction of tissue have occurred does the proliferation of cancer cells take place. The lactic acid is developed by the cleavage of sugar, which is one of the three essential oxidizable products of the normal cell. In normal cells, however, the capacity for the splitting of sugar is extremely slight. The marked action of lactic acid, which occurs in cancer-infected tissue, must have been incited by a markedly increased sugar splitting capacity of the cancer cells, and we owe to Warburg the discovery of this capacity.

We have thus an explanation of how the malignancy of cancers originates. According to the investigations of the speaker on living animals, coincident with this increased lactic acid formation, there is always an increased cell proliferation. The two phenomena may, therefore, be regarded as symptoms of one and the same process—of a purely physicochemical process, which in tar cancer is induced in the cells of normal tissue by the components of the tar.

It was the further problem of the investigator to establish what cancer-forming substances are present in tar, and, more particularly under what conditions such substances are capable of carrying the whole process to the final stage. The cancer-forming tar was analyzed as to its inorganic components, as observations on its organic components had already been made in previous experiments. By chemical analysis, a number of substances were discovered in tar which cause in experimental animals the formation of lactic acid and a marked proliferation of cells at the site of application. It has not been possible as yet to bring about a completely developed cancer with these substances. An important link in the chain of evidence is still missing, and the connection between the various cancerogenic factors has not yet been clearly demonstrated. Projection on the screen of slides showing the experimentally produced changes in the tissues revealed an astonishing resemblance between the changes in this stage, which were still benign, and the malignant cancerous changes in the tissues as produced by tar.

Marriages

Charles Edward Hildreth, Mount Pulaski, Ill., to Miss Margaret Amalia Stumpf of Lincoln, July 4.

John Frederick Cumming, Abercrombie, N. D., to Miss Helen Katherine Carter of Brooklyn, May 9.

John J. Phelan, Jr., Albany, N. Y., to Miss Ruth Mary Carrigan of Springfield, Mass., June 10.

Ellis Hewitt Edwards, Mulga, Ala., to Miss Lida Scott McCarty of Owensboro, Ky., June 2.

Edward P. Guerrant, Winchester, Ky., to Miss Lucy Branaman of Lexington, June 22.

Dennis A. Bethea, Muncie, Ind., to Miss Magdaline Broadus of Louisville, June 25.

Emmett O. Martin, Three Sands, Okla., to Miss Ruth Guild of Bartlesville, May 26.

Louis C. Vattier, Philadelphia, to Miss Daisy I. Merril, both of Philadelphia, July 10.

Frank M. Gowdy to Mrs. Margaret Kingsland Snyder, both of St. Joseph, Mich., July 2.

James Vincent Ricci, New York, to Miss Ruth L. Williams of Ithaca, May 30.

Maximilian W. Goldstein to Miss Rose Rothenberg, both of New York, July 2.

Harold I. Reynolds to Miss Mary Elizabeth Sims, both of Athens, Ga., June 22.

George A. Manting to Miss Lillian Neubarth, both of St. Louis, June 30.

John J. Young, Jr., to Miss Mary C. Maher, both of Brooklyn, July 8.

Richard M. Brickner to Miss Ruth Pilpel, both of New York, July 1.

S. R. Norris to Miss Johnnie O'Neal, both of Jacksonville, Fla., May 6.

Frank M. Hand to Miss Muriel Downer, both of Atlanta, Ga., June 1.

Deaths

John Hiram Gleason ⊕ Manchester, N. H.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1895; proprietor of the Beacon Hill Hospital; formerly on the staffs of the Hospital of Notre Dame de Loardes and the Elliot Hospital; aged 55; died, June 29, of influenza and cardiac embolism.

John Jay McCloud, Orient, Ohio; Miami Medical College, Cincinnati, 1895; member of the Ohio State Medical Society and the American Psychiatric Association; on the staff of the Orient Branch of the Institution for the Feebleminded; aged 50; died, June 29, at the University Hospital, Columbus, of neuritis.

Oliver Currie Struthers, Siloam Springs, Ark.; University of Louisville School of Medicine, 1901; veteran of the Spanish-American and World wars; physician of the United States Indian Service; aged 55; died, June 8, at the U. S. Veterans' Hospital No. 51, at Tucson, Ariz., of chronic nephritis.

Thomas Joseph Valliere Dagnault ⊕ Chicago; Chicago College of Medicine and Surgery, 1911; member of the American Urological Association, and the Chicago Urological Association; served in the M. C., U. S. Army, during the World War; aged 38; died suddenly, July 8, of heart disease.

Leverett George De Veber, Lethbridge, Alta., Canada; University of Pennsylvania School of Medicine, Philadelphia, 1870; for many years senator of Canada; medical health officer of Lethbridge for twenty-nine years; aged 76; died, July 9, at his summer home in Aylmer, Que.

Philip M. Neary, Cortland, N. Y.; Medical Department of the University of the City of New York, 1888; member of the Medical Society of the State of New York; formerly on the staff of the Cortland City Hospital; aged 69; died, July 7, at New York, of heart disease.

Mary Abbie Nickerson, Rochester, N. Y.; Tufts College Medical School, Boston, 1906; member of the Medical Society of the State of New York, and the American Psychiatric Association; on the staff of the Rochester State Hospital; aged 42; died, July 7.

Hugo W. Aufmwasser, Covington, Ky.; Jefferson Medical College of Philadelphia, 1895; member of the Kentucky State Medical Association and the American Academy of Ophthalmology and Oto-Laryngology; aged 55; died, July 6, at St. Elizabeth's Hospital.

William Watson Pharr, Charlotte, N. C.; College of Physicians and Surgeons, Baltimore, 1882; member of the Medical Society of the State of North Carolina; past president of the Mecklenburg County Medical Society; aged 69; died, July 4.

Bernard Henry Lovely ⊕ Welch, W. Va.; University of Maryland School of Medicine and the College of Physicians and Surgeons, Baltimore, 1916; served in the M. C., U. S. Army, during the World War; aged 33; died suddenly, in June.

James Patrick Moore, Jr., Yazoo City, Miss.; Columbia University College of Physicians and Surgeons, New York, 1891; aged 58; died, June 25, at a sanatorium in Cincinnati, as a result of injuries received in a fall several years ago.

Charles C. McCown, Yakima, Wash.; Louisville (Ky.) Medical College, 1882; member of the Washington State Medical Association; member of the board of health; aged 68; died, June 20, of carcinoma of the prostate.

James S. Foote, Omaha; Medical Department of Columbia College, New York, 1881; formerly professor of bacteriology and pathology, Creighton Medical College, Omaha; aged 74; died, June 30, of cerebral hemorrhage.

Washington Benson Trull, Brookline, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1863; member of the Massachusetts Medical Society; Civil War veteran; aged 86; died, June 22.

William W. Moorhead ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1882; formerly on the staffs of the Wills Eye and Samaritan hospitals; aged 78; died, June 29.

Washington Irving Hewitt, Olean, N. Y.; Niagara University Medical Department, 1889; member of the Medical Society of the State of New York; aged 76; died recently, of heart disease.

Gustavus Frank Schreiber, Chicago Heights, Ill.; Rush Medical College, Chicago, 1875; member of the Illinois State Medical Society; aged 76; died, July 2, at the Masonic Home, Sullivan.

Elva C. Macer ⊕ Evansville, Ind.; Louisville (Ky.) Medical College, 1902; formerly county coroner; on the staff of St. Mary's Hospital; aged 49; died, July 4, at the Walker Hospital.

Oscar Littleton Powell, Onancock, Va.; Jefferson Medical College of Philadelphia, 1900; member of the Medical Society of Virginia; aged 50; died, June 25, following a long illness.

Ralph T. Blount, Lovelady, Texas; University of Texas Department of Medicine, Galveston, 1899; aged 47; died recently, at St. Joseph's Infirmary, Houston, of pneumonia.

Eugene Graham, Ruffin, S. C.; Medical College of the State of South Carolina, Charleston, 1913; member of the South Carolina Medical Association; aged 37; died, June 25.

Edouard Dontial Laforce, Providence, R. I.; University of Montreal Medical Faculty, Montreal, Que., Canada, 1890; aged 61; died, June 28, of acute dilatation of the heart.

Alfred Newton Wakefield, Johnstown, Pa.; Western Reserve University School of Medicine, Cleveland, 1868; aged 83; died, June 22, at the Johnstown Memorial Hospital.

Lewis Lincoln Bryant, Cambridge, Mass.; Medical School of Harvard University, Boston, 1874; member of the Massachusetts Medical Society; aged 75; died recently.

William Stewart McClellan, Long Beach, Calif.; Rush Medical College, Chicago, 1894; formerly a practitioner of Iowa; aged 58; died, June 30, of angina pectoris.

David White, Antlers, Okla.; Missouri Medical College, St. Louis, 1885; member of the State Medical Association of Texas; aged 65; died, June 22, of nephritis.

Elton Brock Grubs, Emporia, Kan.; Ohio Medical University, Columbus, 1897; aged 49; died recently, at Kansas City, Mo., of heart disease.

Alexander Chambers Gibson, Kansas City, Mo.; University of Michigan Medical School, Ann Arbor, 1872; aged 86; died, July 5, of pneumonia.

Thomas Edgar Nelson, Brighton, Tenn.; University of Nashville Medical Department, 1884; aged 64; died, June 13, following a long illness.

Edward Alexander Taylor, Racine, Wis.; Rush Medical College, Chicago, 1890; aged 61; died, July 3, following a long illness.

W. J. Knox, Ingomar, Miss. (licensed, Mississippi); aged 59; died, in June, of arteriosclerosis and chronic interstitial nephritis.

George W. Dysinger, Minneapolis; Minnesota Hospital College, Minneapolis, 1886; also a dentist; aged 70; died, June 28.

David J. Turner, Gridley, Calif.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1879; aged 72; died, May 20.

George French Owens, Chaptico, Md.; University of Maryland School of Medicine, Baltimore, 1896; aged 52; died, May 17.

Daniel W. Humphrey, Sperry, Okla.; Eclectic Medical Institute, Cincinnati, 1883; aged 68; died, June 16, of heart disease.

Arthur Bascom Croom, Maxton, N. C.; University of Maryland School of Medicine, 1905; aged 45; died, June 15.

Frank Herbert Hoyt, Sharon, Pa.; Pulte Medical College, Cincinnati, 1887; aged 62; died, June 2, at the Buhl Hospital.

Gilbert R. Sherwood, Pasadena, Calif.; Long Island College Hospital, Brooklyn, 1866; aged 86; died recently.

James J. Shea ⊕ Hicksville, N. Y.; Albany Medical College, 1907; aged 43; died, June 27, of heart disease.

John Goodwin Steiner, Los Angeles; Cooper Medical College, San Francisco, 1893; aged 74; died, June 13.

Milton L. Humston, Goodland, Ind.; Kentucky School of Medicine, Louisville, 1866; aged 87; died, July 1.

E. S. Rogers, Knoxville, Tenn.; Atlanta Medical College, 1868; Civil War veteran; aged 81; died, June 27.

C. D. Redding, Sparta, Ga.; Southern Medical College, Atlanta, 1894; aged 63; died, June 24.

David N. Hardin, Sutallee, Ga. (years of practice); aged 81; died, June 16.

John Singleton Mitchell, Boston (years of practice); aged 71; died recently.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

FITTING GLASSES BY MAIL

The Ritholz Mail-Order Quackery

That people with refractive errors should patronize the counters of the five-and-ten-cents stores is not greatly to be wondered at, for the public is notoriously ignorant of the fundamentals of ophthalmology. But it would not seem possible that the public could be so profoundly ignorant of elementary optics that it would believe it possible for a concern to be able to furnish spectacles by mail on the basis of no more information than the age of the patient and the number of years he has worn glasses. Yet it is a fact that the public is so easily hoodwinked in matters affecting the cure or alleviation of human ailments that one concern in the city of Chicago is said to do a business in excess of a million dollars a year in selling spectacles on the mail-order plan.

In the cheap and not-too-particular weeklies and monthlies, and also in some papers making at least a pretense to decent advertising standards there have appeared advertisements reading in part:

> SPECTACLES FREE ON TRIAL
>
> I will send you on 10 days' free trial a pair of my famous "True Vision" Shell Rim Spectacles.
>
> These splendid "True Vision" glasses will enable anyone to read the smallest print, thread the finest needle, *see far or near*, and prevent eye strain or headaches.

With each advertisement there was a coupon to be filled in. In addition to the name and address of the person sending for the glasses the only questions to be answered relative to refractive errors were (1) "How old are you?" and (2) "How many years have you used glasses (if any)?" Most of these advertisements have been put out in the name of the "Ritholz Spectacle Company," although a year or two ago they were run in the name of "Dr. Ritholz" who was said to be:

> "Doctor of Optics, Member American Optical Association, Illinois State Society of Optometrists, Graduate Illinois College of Ophthalmology and Otology, Famous Eye Strain Specialist."

Not long ago radio fans were regaled by a piece of advertising puffery sent out from one of the commerical broadcasting stations. The announcer introduced to the listeners "Dr. Ritholz" who, as soon as he commenced speaking, said he represented the "United States Spectacle Association." After some platitudes regarding the desirability of good eyesight, the "doctor" announced that it was now possible to be fitted with glasses on the basis of no further information than that of the age of the person and the length of time he had worn glasses, if any. "Dr." Ritholz then told his listeners that if they needed glasses they could send this information to the "United States Spectacle Association" at Chicago and they would be furnished with spectacles for which there would be no charge unless they were entirely satisfactory.

A FAMILY AFFAIR

The Ritholz Spectacle Company is but one of many names used by the National Watch and Jewelry Company that is run by the Ritholz family. Some of the names that the concern seems to use in selling spectacles on the mail-order plan are: "Chicago Spectacle House," "Paramount Optical Company," "U. S. Spectacle Company," "Popular Spectacle Company," "Madison Spectacle Company," and "Fitwell Spectacle Company."

The National Watch and Jewelry Company, it appears, is owned by one Juda Ritholz and his several sons as follows:

Juda D. Ritholz, President
Samuel J. Ritholz, Vice-President
Morris Ritholz, Treasurer
Benjamin D. Ritholz, Secretary and Manager

Juda Ritholz, who is reported to have engaged in business in 1909, to have taken advantage of the bankruptcy act in 1911, and subsequently to have operated in his wife's name up until the time of incorporating the National Watch and Jewelry Company in 1916, appears in the various Chicago city directories as "jeweler." In the directory for 1916 he also appears as "optometrist." None of the Ritholz family is a physician.

SOME PRELIMINARY TESTS

One of the Ritholz advertising methods is that of sending to prospects a self-addressed postcard which the recipient needing glasses is asked to return with his name and address, his age, and the number of years he has used glasses, if any. In order to test the ability of the company to fit glasses on no more information than that called for, the Ritholz concern was written to from different parts of the United States calling for glasses for persons of varying ages. Some of the cases follow:

Case 1.—A person, aged 52, who had worn glasses 6 years, when refracted by an oculist was found to need for distant vision: R. E. + 1.75 ⊃ + 0.75 cyl. ax. 145; L. E. + 1.50 sph. He needed an addition to each eye of + 2.00 diopters for near vision. This person received from the Ritholz Spectacle Company, on the basis of the data furnished as required, a pair of the "free trial glasses" that were found to contain simple spherical lenses, the same for each eye, of the strength + 2.5 diopters. Naturally they were worthless to the individual in question either for distant vision or for reading.

Case 2.—Exactly similar data furnished the "Popular Spectacle Company" brought a pair of glasses containing simple spherical lenses, each + 2.75 diopters.

Case 3.—A person, aged 35, who had worn glasses 9 years had been scientifically fitted with glasses as follows: R. E. — 0.50 sph. ⊃ + 0.50 cyl. ax. 90; L. E. — 0.25 sph. ⊃ + 0.25 cyl. ax. 90. He received from the Ritholz Company a pair of spherical lenses, each + 1.50 diopters.

Case 4.—A girl, aged 21, had worn glasses 4 years, and needed: R. E. — 1.0 sph.; L. E. — 1.50 sph. She received from the Ritholz concern lenses each of which was + 1.25 diopters. In other words, while like Case 3 she was myopic, she was sent glasses for far-sightedness.

Other data were also sent to the concern from several points and the results can be tabulated as follows:

Age	No. of Years Glasses Worn	Glasses Sent
72	6	+4.50
66	48	+4.00
66	44	+4.00
62	6	+3.50
52	6	+2.75
52	6	+2.50
32	6	+2.25
35	9	+1.50
21	4	+1.25

In every case the glasses sent by the Ritholz concern were plus spheres; that is, all were for hyperopia although some of the prospective patients were myopes.

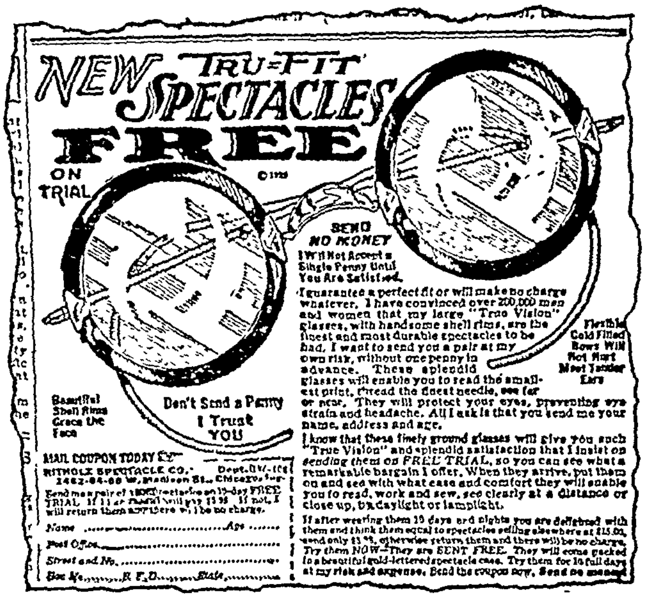
It was evident from the investigation that the Ritholz concern hardly expected, except as a lucky fluke, to furnish in the "trial glasses," spectacles that even *seemed* to be satisfactory to the purchaser. Every such "trial pair" was accompanied with a form letter stating that the glasses that were being sent should be perfectly satisfactory for either close work or distance if the information that had been sent in was correct. This, as physicians will recognize, is an obvious falsehood. The statement was further made that if the "trial pair" failed to suit it might be because the spectacles that had previously been worn were "unsuitable and have complicated the vision." However, the Ritholz form letter continued, if the "trial glasses" do not suit, the patient could test his eyes with the "eye tester" chart that accompanied the letter, fill out the question blank, returning the blank and the "trial glasses"—together with $3.98. The questions asked on the blank that was to be filled in were:

> "A.—Did the trial pair fit you for reading?
>
> "B.—Put on the spectacles and by moving this sheet to and from your eyes see at what distance you can read this print best. Here state at how many inches.
>
> "C.—How old are you?
>
> "D.—How many years have you used reading glasses?
>
> "E.—How many lines of print can you read on my test sheet 13 inches from the eye without spectacles?
>
> "F.—Now put on my spectacles. How many lines of print can you read on my test sheet 13 inches from the eye with *my spectacles*?"

In order that the methods of the Ritholz concern might be further tested, some of these blanks were filled in and sent back to the Chicago company with the money orders and the trial glasses. Four of the test cases follow:

FURTHER TESTS

Case A.—Mr. L. B. sent to the Ritholz Spectacle Company one of their cards, giving his age and the length of time he had worn glasses. In due course he received a package containing a pair of spectacles, each lens of which was found to be spheres, + 0.5 diopters. As he was totally unable to see with these glasses he filled in the "exchange blank," after testing his eyes in accordance with the instructions furnished by Ritholz, returned it with the first pair of glasses and a money order for $3.98. Later he received a second pair of glasses. These, when tested, were found to be exactly the same as the first pair sent, namely: + 0.5 diopters, sph., the same for each eye. This individual's eyes when tested by an ophthalmologist were found to be markedly myopic and astigmatic requiring: R. E. — 12.00 sph. ⊃ — 3.50 cyl. ax. 165; L. E. — 12.00 sph. ⊃ — 3.50 cyl. ax. 15.


NEW TRU-FIT SPECTACLES
FREE
ON TRIAL
SEND NO MONEY
Beautiful Shell Rims Grace the Face
Don't Send a Penny I Trust YOU
Flexible Gold Filled Bows Will Not Hurt Most Tender Ears

I Will Not Accept a Single Penny Until You Are Satisfied.

I guarantee a perfect fit or will make no charge whatever. I have convinced over 200,000 men and women that my large "True Vision" glasses, with handsome shell rims, are the finest and most durable spectacles to be had. I want to send you a pair at my own risk, without one penny in advance. These splendid glasses will enable you to read the smallest print, thread the finest needle, see far or near. They will protect your eyes, preventing eye strain and headache. All I ask is that you send me your name, address and age.

I know that these finely ground glasses will give you such "True Vision" and splendid satisfaction that I insist on sending them on FREE TRIAL, so you can see what a remarkable bargain I offer. When they arrive, put them on and see with what ease and comfort they will enable you to read, work and sew, see clearly at a distance or close up, by daylight or lamplight.

If after wearing them 10 days and nights you are delighted with them and think them equal to spectacles selling elsewhere at $15.00, send only $3.98, otherwise return them and there will be no charge. Try them NOW—They are SENT FREE. They will come packed in a beautiful gold-lettered spectacle case. Try them for 10 full days at my risk and expense. Send the coupon now. Send no money.

MAIL COUPON TODAY [illegible]

RITHOLZ SPECTACLE CO., Dept. [illegible]
1462-64-66 W. Madison St., Chicago, [illegible]

Send me a pair of [illegible] on 10-day FREE TRIAL. If [illegible] will pay $3.98. If not, I will return them [illegible] there will be no charge.

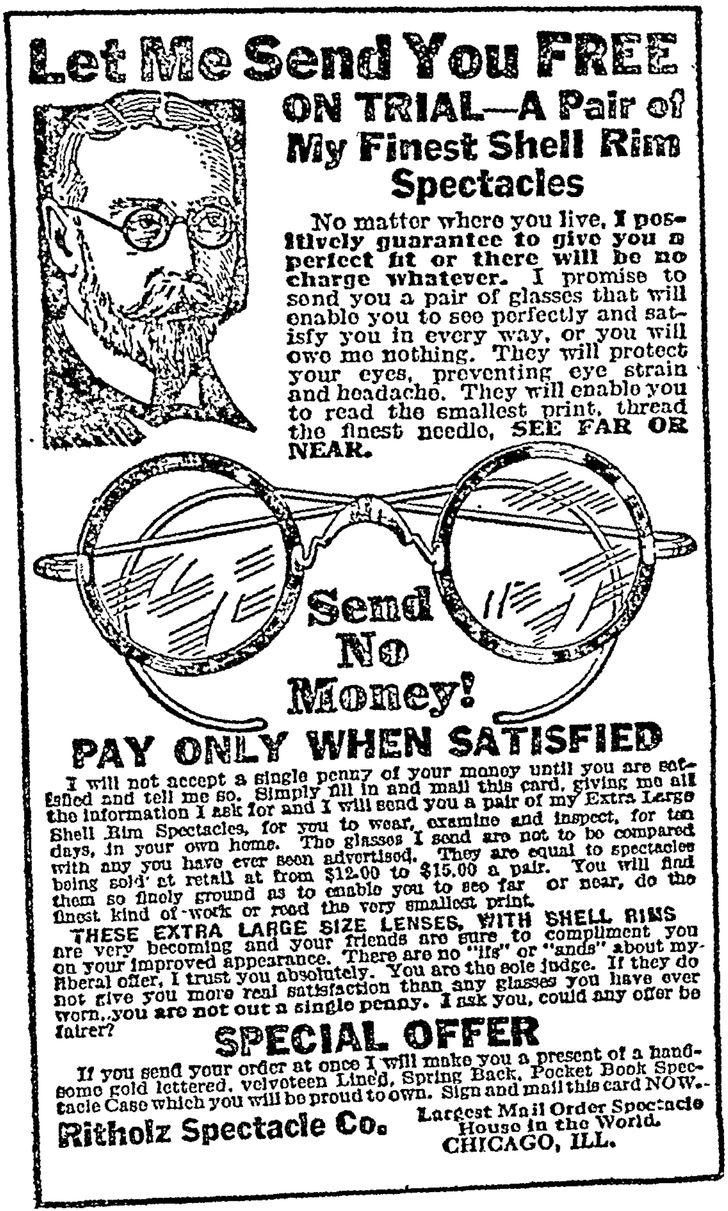
Name .... Age ....
Post Office ....
Street and No. ....
Box No. .... R. F. D. .... State ....

Photographic reproduction (reduced in size) of a typical advertisement of the Ritholz Spectacle Co. Note the statements that the glasses sent by the concern will permit you to "see far or near," and will prevent eyestrain. On the contrary, there is but one chance in thousands that the glasses this concern sends will meet the optical requirements of those buying them. There is every likelihood that instead of "preventing eyestrain," as advertised, they will cause eyestrain.

Case B.—Mr. L. H. M. filled in the usual Ritholz card and received a pair of spectacles, each lens of which was + 1.50 diopters, sph. These were sent back with the blank form filled out for the "eye tester" instructions, accompanied by the required money order. He then received *another* pair of spectacles from the Ritholz concern, each lens being of + 0.50 diopters, sph. When L. H. M.'s eyes were tested by an oculist it was found that he was near-sighted, requiring: R. E. — 4.00 sph. ⊃ — 1.00 cyl. ax. 160; L. E. — 4.25 sph. Naturally the glasses sent by the Ritholz concern, even after the instruction blank had been filled in, were utterly worthless.

Case C.—Mr. D. M. filled out one of the Ritholz cards, giving his age and the length of time he had worn glasses, and received a pair of spectacles from the concern that were + 1.25 diopters, spheres, the same for each eye. These glasses were found useless and were returned with the money order and the "eye tester" blank filled out. The second pair that came were also spheres, each lens of the same strength and each + 0.75 diopters. When Mr. D. M.'s eyes were tested by an oculist it was found that he was myopic, requiring R. E. — 0.75 cyl. ax. 125; L. E. — 0.25 sph. ⊃ — 1.00 cyl. ax. 50. Here again the lenses sent by Ritholz were worthless.

Case D.—Mr. S. M. H. sent in a Ritholz card, giving the information asked for, and received a pair of glasses each lens of which was + 1.25 diopters, spheres. These were returned with the information called for on the "eye tester" blank and with the necessary money order. He then received another pair of glasses, each lens of which was found to be + 0.50 diopters, spheres. These were utterly unfitted for Mr. H.'s optical requirements which an oculist found to be: R. E. — 0.62 cyl. ax 160; L. E. + 2.50 sph. ⊃ — 0.25 cyl. ax. 20.



Let Me Send You FREE
ON TRIAL—A Pair of My Finest Shell Rim Spectacles

No matter where you live, **I positively guarantee to give you a perfect fit or there will be no charge whatever.** I promise to send you a pair of glasses that will enable you to see perfectly and satisfy you in every way, or you will owe me nothing. They will protect your eyes, preventing eye strain and headache. They will enable you to read the smallest print, thread the finest needle, **SEE FAR OR NEAR.**

Send No Money!

PAY ONLY WHEN SATISFIED

I will not accept a single penny of your money until you are satisfied and tell me so. Simply fill in and mail this card, giving me all the information I ask for and I will send you a pair of my Extra Large Shell Rim Spectacles, for you to wear, examine and inspect, for ten days, in your own home. The glasses I send are not to be compared with any you have ever seen advertised. They are equal to spectacles being sold at retail at from $12.00 to $15.00 a pair. You will find them so finely ground as to enable you to see far or near, do the finest kind of work or read the very smallest print.

THESE EXTRA LARGE SIZE LENSES, WITH SHELL RIMS are very becoming and your friends are sure to compliment you on your improved appearance. There are no "ifs" or "ands" about my liberal offer, I trust you absolutely. You are the sole judge. If they do not give you more real satisfaction than any glasses you have ever worn, you are not out a single penny. I ask you, could any offer be fairer?

SPECIAL OFFER

If you send your order at once I will make you a present of a handsome gold lettered, velveteen Lined, Spring Back, Pocket Book Spectacle Case which you will be proud to own. Sign and mail this card NOW.

Ritholz Spectacle Co.
Largest Mail Order Spectacle House in the World.
CHICAGO, ILL.

Reduced facsimile of one side of the ready addressed postcards sent out by the Ritholz concern for the dupes to fill in with age, number of years glasses have been worn and name and address.

It would seem evident even to those with no medical training that it is an impossibility to correct refractive errors on the mail-order plan. Yet the Ritholz concern is doing a huge business and the public is, apparently, unprotected.

THE DECENT PUBLISHER AND ADVERTISER

The National Better Business Bureau of the Associated Advertising Clubs of the World issued a bulletin more than two years ago specifically condemning the methods of the Ritholz and similar concerns. They characterized such methods as "reckless and unscrupulous exploitation of visual defects," and declared that such exploitation was "highly dangerous." The Better Business Bureau of Dallas, Texas, which is a component branch of the Associated Advertising Clubs of the World, issued a report on the Ritholz scheme with the result that the *Times-Herald* and the *Dispatch* of that city refused to accept any further Ritholz advertising copy.

The *Orange Judd Illinois Farmer* was offered some "spectacle-fitting-by-mail" advertising, and the editor of that journal wrote to the American Medical Association asking if such fitting was possible. After receiving a reply, this farm magazine refused the copy. A popular magazine of large circulation, the *Woman's World*, also refused the Ritholz advertising. As a result the advertising director of that magazine received a four page letter from the Arnold Joerns Company advertising agency, which seemingly handles the Ritholz account. Joerns attempted to justify the Ritholz methods and mentioned incidentally that his agency had an advertising appropriation of $120,000 a year to spend for the Ritholz concern. He mentioned, too, that the Ritholz people had "willingly scheduled with us a $40,000 bond to protect us in connection with their advertising." Just what protection was needed was not explained. In attempting to demonstrate how respectable and otherwise desirable this kind of copy was, Joerns declared that the following magazines were carrying the Ritholz advertising:

All-Fiction Field
Adventure
Ainslee's
Argosy Allstory
Detective Story
Everybody's
Love Story
Munsey's
People's
Short Stories
The Popular
Top-Notch
Western Story and Frontier
People's Home Journal
People's Popular Monthly
Holland's Magazine
Comfort Magazine
Wallace's Farmer
Wisconsin Farmer
Iowa Homestead
Farmer & Breeder
Arkansas Homestead
Prairie Farmer
Better Farming
Wisconsin Agriculturist
Farm & Home

THE SUCKER LIST

Physicians are familiar with the scheme long used by the mail-order quacks and nostrum venders of selling the original letters they receive from their dupes after the gullible have been worked to the limit on that particular scheme. A few months ago a circular letter on the stationary of the "Chicago Advertising Agency," Suite 1540, 160 North La Salle Street, Chicago, was sent out, bearing an announcement which read in part as follows:

> "Our clients, the Ritholz Spectacle Company, of this city are now ready to release their 1924 orders which will total approximately one million names. These are all original replies received from advertising in mail order and farm publications. . . . Enclosed please find specimen of their letters. We can rent these to you, shipping you the original letters for $5 per thousand. . . .
>
> "If you are a user of original mail order letters, this is an opportunity of a lifetime for you as these names have never yet been rented or addressed for anyone."

A visit to the address of this advertising agency—Suite 1540, 160 North La Salle Street—brought some interesting disclosures. The suite in question is occupied by a large number of concerns of which the "Chicago Advertising Agency" is one. Inquiry at the information desk elicited the statement that at that time no one connected with the Chicago Advertising Agency was in, and that the only person connected with this agency was Benjamin D. Ritholz (whose name appeared on the door in the list of those occupying the suite) and that Mr. Ritholz kept no regular hours and was seldom at this office. Question: Is the "Chicago Advertising Agency" merely a "paper" organization created to enable the Ritholz Spectacle Company to dispose of its list of suckers?

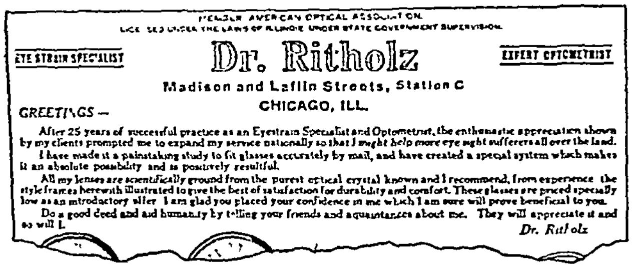
There may be many a man, who in 1924 wrote an unsuspecting letter to the Ritholz Company, now wondering how the concerns that offer to cure rupture, rheumatism, prostatic hypertrophy, or what not, ever got hold of his name. Possibly, too, many a woman who wrote to this spectacle-fitting outfit is mildly curious to learn how the people with bust developers or sure cures for female ailments ever got hold of her name and address.

Mail-order merchandizing is a well-developed and in general a highly reputable line of trade. The success of those large mail-order concerns that have built up an enormous business is due to fair dealing with the public. Enlightened self-interest alone has made it necessary for the mail-order concern that deals in ordinary merchandise to be honest with its customers if it expects to stay in business. As has many times been pointed out, however, the checks and balances that enable the public to determine whether or not it has been swindled in the purchase of ordinary merchandise are woefully lacking in the sale of appliances or drugs sold for the cure or alleviation of human ailments. So large a proportion of the sufferers from simple ailments get well without any treatment that they are unable to tell whether any treatment has even a remote causal relation to their recovery. In the case of spectacle-fitting the individuals that are furnishing the victims for such concerns as the Ritholz Spectacle Company are hyperopes and presbyopes who find that the spectacles they receive from this mail-order house *do* permit them to see more clearly. They are ignorant of the fact that the glasses may be, and in an enormous preponderance of cases *must* be, wholly unsuited to their visual requirements and they pay for, keep and wear them, still further damaging their eyes.

WHAT OTHERS THINK

The Philadelphia *Evening Bulletin* in an editorial published some months ago well stated the case against the mail-order spectacle fitting house:

> "Chicago is noted for its great mail-order houses. If those big merchandising institutions want to preserve the Chicago reputation for honest trading by mail, there is another kind of mail business operating out of their city to which they might profitably devote stern and steady attention.



MEMBER AMERICAN OPTICAL ASSOCIATION
LICENSED UNDER THE LAWS OF ILLINOIS UNDER STATE GOVERNMENT SUPERVISION

EYE STRAIN SPECIALIST — **Dr. Ritholz** — EXPERT OPTOMETRIST

Madison and Laflin Streets, Station C
CHICAGO, ILL.

GREETINGS —

After 25 years of successful practice as an Eyestrain Specialist and Optometrist, the enthusiastic appreciation shown by my clients prompted me to expand my service nationally so that I *might help more eye sight sufferers* all over the land.

I have made it a painstaking study to fit glasses accurately by mail, and have created a special system which makes it an absolute possibility and as positively resultful.

All my lenses *are scientifically* ground from the purest optical crystal known and I recommend, from experience the style frames herewith illustrated to give the best of satisfaction for durability and comfort. These glasses are priced specially low as an introductory offer. I am glad you placed your confidence in me which I am sure will prove beneficial to you.

Do a good deed and aid humanity by telling your friends and acquaintances about me. They will appreciate it and so will I.

Dr. Ritholz

A year or two ago this concern was advertising not as a company but as a "doctor"—an "eye strain specialist" and "expert optometrist" of 25 years' "successful practice." No member of the Ritholz family is a physician. The city directories class them, respectively, as "jeweler," "watchmaker" and "engraver." There is also one who seems to be a lawyer.

> "The fakers who get possession of artificial limbs on pretense of repairing them are no meaner than the mail-order spectacle fakers who are flooding Philadelphia with their circulars.
>
> "It is, of course, utterly preposterous for a man in Chicago to undertake to fit spectacles to the eyes of a man in Ardmore, Pa. Yet these houses 'positively guarantee a perfect fit, which will prevent eye strain and headache, enable the Ardmore buyer to read the smallest print, thread the finest needle and see far or near.' . . .
>
> "It is not complimentary to common sense that anybody should imagine his eyes can be fitted to spectacles by a man 1,000 miles away. But evidently the Chicago gentry catch plenty of suckers or they would give up the game. Isn't it possible for Postal authorities to put an end to this preying on the credulous public?"

In closing we cannot do better than quote two paragraphs of the report of the National Better Business Bureau, already referred to, dealing specifically with the methods of the Ritholz and similar concerns.

> "To an intelligent person it needs no demonstration that such reckless and unscrupulous exploitation of visual defects is highly dangerous. Thousands of people uninformed regarding optometrical matters, may be led into patronizing these callous advertisers, who care nothing for the lasting damage they may do to the eyesight of their victims so long as they 'get the money.'
>
> "It is obvious, however, to any one intelligent enough to be connected with a newspaper in a responsible position that such a delicate and valuable organ as the human eye, should, on no account, be subjected to treatment as dangerous as this perfunctory 'test' and 'fitting' of mail-order spectacles. No one can even guess how many unfortunate people, whose eyes might have given them good service for a lifetime, have suffered all the pain and injury which this bungling inaccuracy necessarily entails. Many a fairly good pair of eyes may have been absolutely ruined by these methods."

Correspondence

"IRRADIATED FOODS AND IRRADIATED ORGANIC COMPOUNDS"

To the Editor:—The article on "Irradiated Foods and Irradiated Organic Compounds" by Drs. Steenbock and Daniels (THE JOURNAL, April 11) is of the greatest interest, opening up wide fields of hitherto undreamed-of possibilities in the enhancement of the antirachitic value of foods.

From the investigations recorded in the article, it would appear that the antirachitic principle in all foods is merely a stored-up form of radiant energy.

This naturally raises the question as to whether certain other forms of light, such as radium emanation or the phosphorescence of phosphorus, may not also be antirachitic in action.

With regard to radium emanation, I am unaware of any experimental evidence on this subject; but concerning phosphorus it is highly significant that all standard textbooks on therapeutics state that the action of phosphorus in rickets is exactly analogous to that of the ultraviolet rays; that is to say, it causes spongy bone to become compact and cartilage to become ossified.

Mitchell Bruce, among others (Materia Medica and Therapeutics, Edition 10, page 127) states that:

> Phophorus has marked effects on the formation of bone. In young animals the spongy tissue is replaced by compact bone, and the cartilages of long bones become bony tissue. It has been found that in rickety children calcium is excreted in excess, but that under phosphorus treatment more calcium is absorbed and less excreted.

I would therefore suggest that the action of phosphorus in rickets is worthy of modern laboratory investigation, and should its action be found to be analogous to that of the mercury vapor lamp we shall at once find ourselves provided in phosphorated oil—the Oleum Phosphoratum of the British pharmacopeia—with a cheap and universally available substitute for both the mercury vapor lamp and sunlight in the clinical treatment of rickets.

JOHN W. TOMB, M.D., Asansol, Bengal, India.
Chief Medical Officer, Mines Board of Health.

CHILD MARRIAGE IN THE UNITED STATES

To the Editor:—I read with a great deal of interest the abstract of the report on child marriage in the United States by the Russell Sage Foundation (THE JOURNAL, July 4). I have seen three cases at the station hospital at Fort Sill within the last few months, of girls being married to soldiers at 13 years of age and giving birth to children when just 14 years old. These little girls are pathetic beyond description, and the health of all three is badly undermined. One phase of the situation not touched on in this report is the complete lack of religious help in these cases. In the three cases I mention, the marriage ceremony was not performed by army chaplains, I am glad to say, but by the clergyman. No self respecting clergyman should be an accessory to such a crime; only creatures disgracing their cloth, like many of those who infest Rockville and Elkton, Md., with runners waiting at railroad stations. If the churches will pay proper attention to this sad commentary on civilization seen every day by our physicians, they will do humanity a real help and do many untold blessings for these suffering child wives.

M. A. DELANEY, M.D., Fort Sill, Okla.
Lieutenant Colonel, M. C., U. S. Army.

Queries and Minor Notes

Anonymous Communications *and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.*

ZÜND-BURGUET ELECTROPHONOIDE METHOD FOR DEAFNESS

To the Editor:—In an abstract in The Journal, June 13, p. 1878, the Zünd-Burguet electrophonoide method of treatment for deafness is mentioned. Will you kindly describe this method in detail? What is your opinion of this treatment?

Harry A. Johnson, M.D., Fort Morgan, Colo.

Answer.—In the *Lancet* (**1**:968 [May 9] 1925), George C. Cathcart described the instrument made by and originated by M. Zund-Burguet of Paris. This instrument produces the sound vibrations of the whole range of the human voice and this gives a physiologic stimulus to the middle ear. It contains three mechanical larynges in which the vocal cords are replaced by vibratory platinum lamellae. These are capable of producing in the desired intensity sounds resembling those of the human voice, extending over five octaves and passing not merely through tones and overtones but also through all the vibrations between 80 and 3,500. This is done by sliding platinum contacts along the vibrating lamellae, the action resembling the movements of the fingers over the strings of a violin. The sounds so produced are of varying quality and are variable at will. They are transmitted to the ear by a modified telephonic receiver. A secondary current can be superimposed on the primary one which makes the sounds, and a vibratory massage of the whole auditory tract is produced. The complex vibrations produced by the electrophonoides act first as a sonorous phenomenon and secondly as a dynamic phenomenon, and it is to this double action that the author attributes the results obtained.

For many years, various appliances have been devised to increase hearing by stimulating the auditory apparatus. It is doubtful whether any of them have given any more satisfactory results, when any improvement at all has been noted, than has been obtained by means of the oral method originally devised a good many years ago by Urbantschitsch of Vienna. Most of the forms of apparatus that have been suggested are very expensive, and sometimes not only give no beneficial results, but may even impair the existing hearing, according to some observers. It will therefore require further study with different instruments before a definite conclusion as to their actual value can be reached.

EYE SHIELDS

To the Editor:—Can you tell me where I can procure eye shields for the use of patients sleeping outdoors? These are black shields that cover the eyes, shutting out the light.

Warren T. Vaughan, M.D., Richmond, Va.

Answer.—The Chicago Eye Shield Company, 2300 Warren Avenue, Chicago, manufactures what is known as "Ring's cataract mask," which consists of a band of buckram shaped to fit the contour of the face and held in place by two bands of tape, which tie at the back of the head. These exclude the light and may be used by those sleeping outdoors. An eye shield shaped in much the same way but made of elastic material, on the order of knit jersey, may be made to fit over the base of the nose and the forehead and held in place with tapes.

SODIUM IODID IN BRONCHIAL ASTHMA

To the Editor:—Kindly refer me to any literature on the use of sodium iodid in the treatment of bronchial asthma. I am particularly interested in the intravenous use of the drug, the dosage and frequency of administration.

H. L. Gokey, M.D., Alexandria Bay, N. Y.

Answer.—The use of iodids as adjuvants in the treatment of asthma seems to be of such general acceptance that recent medical literature reveals few special studies of its effects. A search of The Journal index back to 1910 gives only one reference (a short abstract from the *Practitioner* **102**:218 [April] 1919, The Journal, May 3, 1919, p. 1331). An article was written by H. J. Harris on "Intravenous Medication, with Special Reference to Iodoform and Sodium Iodid in Treatment of Acute and Chronic Respiratory Diseases" (*Journal-Lancet* **40**:535 [Oct. 1] 1920).

The use of iodids in asthma is treated at some length in Osborne and Fishbein's Handbook of Therapy, Ed. 7, p. 233. A brief note is given in Nelson's Loose Leaf Medicine **3**:464.

In The Journal, Feb. 28, 1925, p. 698, appears a report on the intravenous administration of sodium iodid at the Mayo Clinic. A 10 per cent. solution in doses up to 10 c.c. was used and the authors do not feel that there is any great advantage in using the solution intravenously, except in a few cases in which massive doses might cause iodism.

The Council on Pharmacy and Chemistry does not endorse the routine administration intravenously of sodium iodid (The Journal, April 16, 1921, p. 1120). The Council holds that intravenous medication, generally, is not as safe as oral administration, and, further, that there is little if any justification for the intravenous administration of such agents as sodium iodid, because their systemic effects are promptly obtained from oral administration.

APHTHOUS ULCER — CANKER SORE

To the Editor:—I have many patients with small ulcers on the mucous membrane of the mouth which first appear as red areas varying in size from 2 by 3 mm. to 12 by 12 mm. The ulcers are painful from the beginning to the end. The patients that have them seem to be in a healthy state. The duration varies; it is a form of stomatitis. The laity call them "stomach ulcers." Will you refer me to some reference as to treatment, cause, etc. I do not want my name to appear in The Journal.

M.D., Georgia.

Answer.—This condition, also known as aphthous ulcer (popularly "canker sore"), is described in various systems of medicine, e. g., Tice's, and pictured in "Diseases of the Mouth" by Zinsser (Rebman Company) and the "Atlas der Mund-Krankheiten" by Moral and Frieboes (Leipzig, Vogel, 1924). No satisfactory causation has been decided on. It is a self-limited condition, whose duration rarely exceeds a week. Successive crops may appear. Touching with the silver nitrate stick, though momentarily painful, subsequently relieves the pain and probably hastens the cure.

PHENOBARBITAL (LUMINAL) IN THE VOMITING OF PREGNANCY

To the Editor:—Some time ago I read of luminal being used for the vomiting of pregnancy. I have a patient who is one of the severe cases of the vomiting of pregnancy. I have tried luminal, from 1 to 1½ grains at night. I am having excellent results but want to know whether there is any harm to the child. By giving luminal I feel I can guard the mother, but I do not know its effect on the child.

Mary L. Rosenstiel, M.D., Freeport, Ill.

Answer.—Since hyperemesis is essentially an affliction of the first three months of pregnancy, phenobarbital (luminal) given for this condition would have to affect the fetus early in its development. Were the fetus harmed, it would most likely be aborted because most fetuses that are seriously affected early in pregnancy are expelled spontaneously a short time after their injury. No undue number of miscarriages after the use of phenobarbital has been noted. On the other hand, the children born at or near term, of mothers who had received phenobarbital early in pregnancy, appear normal in every way. Phenobarbital used in the treatment of hyperemesis gravidarum will in all likelihood do no harm to the offspring.

VITAMIN C IN DRIED MILK

To the Editor:—What is the effect of the spray process of drying on the vitamin C content of milk?

M.D., Minnesota.

Answer.—There are two methods used in drying milk, the spray process and the roller or Just process. The question of vitamins in dry milk is an important one, and during the last five years numerous articles have appeared, not all in agreement. The importance of certain factors other than the process of drying has been brought out. Summer milk is richer in vitamins than milk produced during the winter months. The quantity of vitamin present is also influenced by the feed of the animals. The time elapsing until the milk is dried is probably important. Harry Jephcott and Alfred Bacharach in 1921 (*J. Biochem.* **15**, No. 1) found that milk dried by the spray process was markedly deficient in antiscorbutic properties. E. B. Hart, H. Steenbock, and N. R. Ellis (*J. Biol. Chem.* **46**:367 [April] 1921) report that the spray process of manufacture is more destructive of the antiscorbutic properties of milk than the roller process. They advise an additional source of the antiscorbutic elements in infant feeding as the safest procedure. In 1922, J. M. Johnson and C. W. Hooper (*Pub. Health Rep.* **37**:989 [April 28] 1922) reported on the comparative antiscorbutic values of milk. They stated that in general their results show that the process of drying has a destructive effect on the antiscorbutic vitamin, and that pasteurization has a similar effect. Of the dried milks investigated, one brand of roller process milk seemed to have retained a large proportion of its antiscorbutic properties. Other brands made by the same company and by the same process did not. G. W. Cavanaugh, R. A. Dutcher and J. S. Hall (*Am. J. Dis. Child.* **25**:498 [June] 1923) report that in their experiments to date, the spray process of drying milk preserves in its original strength the vitamin C; that is, the antiscorbutic properties of the milk.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 1. Sec., Dr. Harry C. De Vighne, Juneau.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Dr. Charles Duncan, Concord.

PHILIPPINE ISLANDS: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

PORTO RICO: San Juan, Sept. 1. Sec., Dr. Diego A. Biascoechea, 3 Allen St., San Juan.

New York January Examination

Mr. Herbert J. Hamilton, chief, Education Department, New York Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, Jan. 26-29, 1925. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 242 candidates examined, 163 passed, including 1 osteopath, and 79 failed, including 1 osteopath. Forty candidates were licensed by endorsement of their credentials. The following colleges were represented:

PASSED

College	Year Grad.	Number Licensed
University of California	(1923)	1
University of Colorado	(1923)	1
Georgetown University	(1924)	1
George Washington University	(1920)	1
Howard University	(1910, 1) (1923, 2)	3
Emory University	(1924)	1
University of Georgia	(1921)	2
Chicago College of Medicine and Surgery	(1914)	1
Northwestern University	(1924)	1
Rush Medical College	(1923)	2
University of Illinois	(1924)	1
Tulane University	(1920) (1922, 1)	2
Johns Hopkins University	(1918, 1) (1923, 1)	2
University of Maryland	(1923, 1) (1924, 2)	3
Boston University School of Medicine	(1924)	1
Harvard University	(1923, 2)	2
Tufts University	(1923, 1) (1924, 4)	5
University of Michigan Medical School	(1920, 1) (1923, 1) (1924, 4)	6
St. Louis University	(1918)	1
Albany Medical College	(1924)	1
Columbia University	(1922, 1) (1923, 1) (1924, 4)	6
Cornell University	(1921, 1) (1923, 2) (1924, 4)	7
Long Island College Hospital	(1923, 1) (1924, 1)	2
Syracuse University	(1924)	1
University and Bellevue Hospital Medical School	(1924)	5
University of Buffalo	(1911, 1) (1923, 1)	2
Eclectic Medical College	(1924)	2
Ohio State University	(1924)	1
Western Reserve University	(1924)	1
University of Oklahoma	(1924)	1
Hahnemann Medical College and Hospital of Phila.	(1924)	2
Jefferson Medical College	(1923, 1) (1924, 2)	3
University of Pennsylvania	(1923, 2) (1924, 2)	4
University of Pittsburgh	(1920)	1
Woman's Medical College of Pennsylvania	(1924)	4
Vanderbilt University	(1924)	1
Baylor University	(1924)	1
University of Vermont	(1923, 1) (1924, 2)	3
Medical College of Virginia	(1924)	1
McGill University	(1919, 1) (1921, 1) (1922, 3) (1923, 1) (1924, 2)	8
Queen's University	(1919, 2) (1922, 1) (1923, 1)	4
University of Toronto	(1922, 1) (1923, 2) (1924, 5)	8
University of Western Ontario	(1923)	2
Western University	(1922)	1
University of Vienna, Austria	(1910, 1)* (1911, 1)* (1914, 1)* (1921, 1)* (1922, 1)* (1923)*	6
Comenian University, Czechoslovakia	(1920, 1)* (1922, 1)*	2
German University of Prague, Czechoslovakia	(1918, 1)* (1920, 1)* (1921, 1)* (1922, 1)*	4
University of Paris, France	(1896)*	1
University of Berlin, Germany	(1915, 1)* (1919, 1) (1922, 1)* (1923, 2)*	5
University of Frankfort-on-the-Main, Germany	(1920, 1)* (1923, 1)*	2
University of Freiburg, Germany	(1913)	1
University of Jena, Germany	(1923)*	1
University of Kiel, Germany	(1919)*	1
University of Königsberg, Germany	(1920)*	1
University of Tübingen, Germany	(1919)*	1
University of Budapest, Hungary	(1912, 1)* (1918, 1)* (1919, 2)* (1920, 1)* (1921, 1)* (1922, 1)*	7
University of Pozsony, Hungary	(1922)*	1
University of Naples, Italy	(1915, 1)* (1922, 1)* (1923, 3)*	5
University of Padua, Italy	(1917)*	1
University of Palermo, Italy	(1920, 2)* (1921, 1)*	3
University of Rome, Italy	(1922)*	1
University of Siena, Italy	(1920)*	1
School of Medicine and Pharmacy of Jalisco, Mexico	(1915)	1
University of Bucharest, Roumania	(1919)*	1
Imperial University of St. Petersburg, Russia	(1908)*	1
University of Berne, Switzerland	(1917)*	1
University of Zurich, Switzerland	(1919, 2)* (1922, 1)*	3
American Univ. Medical School, Syria	(1894, 1)* (1913, 1)*	2
Osteopath		1

FAILED

College	Year Grad.	Number Failed
Chicago Homeopathic Medical College	(1901)	1
Rush Medical College	(1923)	1
State University of Iowa	(1920)	1
Tulane University	(1921)	1
Baltimore Medical College	(1904)	1
University of Maryland	(1910)	1
Boston University	(1923)	1
Tufts College Medical School	(1924)	2
University of Michigan Medical School	(1923)	1
St. Louis University	(1920)	1
University of Nebraska	(1924)	1
Cornell University	(1923)	1
Fordham University	(1920)	1
Long Island College Hospital	(1912, 1) (1923, 1) (1924, 1)	3
Ohio State University	(1924)	1
University of Oklahoma	(1922)	1
Hahnemann Medical College and Hospital of Philadelphia	(1924, 1) (1920, 1)	2
McGill University	(1919, 1) (1921, 1) (1922, 1)	3
Queen's University	(1919) (1921) (1922) (1924)	4
University of Toronto	(1924)	1
University of Vienna, Austria	(1914)* (1915)* (1918)* (1920)* (1922, 2)*	6
University of Nancy, France	(1913)*	1
University of Berlin, Germany	(1898)* (1914) (1921)* (1922, 2)*	5
University of Erlangen, Germany	(1920)*	1
University of Heidelberg, Germany	(1919)*	1
University of Munich, Germany	(1922)*	1
University of Budapest, Hungary	(1912, 2)* (1918)* (1921)*	4
University of Pozsony, Hungary	(1921)* (1923)*	2
University of Szegedin, Hungary	(1914)*	2
University of Padua, Italy	(1917)*	1
University of Palermo, Italy	(1906) (1921)*	2
University of Naples, Italy	(1907)* (1917)* (1918, 2)* (1919)* (1920, 3)* (1921, 4)* (1923, 5)*	17
University of Rome, Italy	(1919)*	1
University of Cracow, Poland	(1917)*	1
University of Berne, Switzerland	(1910)	1
University of Zurich, Switzerland	(1918)*	1
American University Medical School, Syria	(1913)*	1
University of Constantinople, Turkey	(1919)*	1
Osteopath		1

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Yale University	(1890)	New Jersey
George Washington University	(1901)	Dist. Colum.
Howard University	(1922)	New Jersey
University of Georgia	(1916)	Georgia
Indiana University (1909) Indiana	(1918)	Indiana
Tulane University	(1909)	Louisiana
Medical School of Maine	(1914)	Maine
Johns Hopkins University (1911) Michigan	(1922)	Nat.B.M.Ex.
University of Maryland (1914) North Carolina	(1914)	Maryland
Harvard University (1917) Missouri	(1917)	Mass.
Tufts College Medical School	(1922)	Nat.B.M.Ex.
University of Michigan Medical School..(1898) Michigan (1907) Michigan (1911) Porto Rico		
Washington University (1910) Illinois	(1919)	Ohio
Creighton Medical College	(1917)	Nebraska
New York Homeopathic Med. Coll. and Flower Hosp.	(1891)**	Diploma
University and Bellevue Hospital Medical College	(1907)	Penna.
Eclectic Medical College	(1923)	Ohio
Medical College of Ohio	(1902)	Illinois
Jefferson Medical College	(1901)	Penna.
Medico Chirurgical College of Philadelphia	(1902)	Penna.
University of Pennsylvania (1914) Pennsylvania	(1920)	New Jersey
Vanderbilt University	(1898)	Tenneseee
University of Texas (1913) (1914)	(1917)	Texas
Medical College of Virginia	(1913)	Virginia
University College of Medicine, Richmond	(1909)	Porto Rico
McGill University, Quebec	(1916)	Quebec
University of Naples, Italy	(1915)*	New Jersey
University of Paris, France	(1914)*	Ohio
University of Berlin, Germany	(1917)**	Diploma
University of Constantinople, Turkey	(1912)*	Ohio

* Graduation not verified by the American Medical Association.

** Licensed by endorsement of diploma.

Book Notices

Life and Letters of Mary Putnam Jacobi. Edited by Ruth Putnam. Foreword by George Haven Putnam. Cloth. Price, $3.50. Pp. 381, with 10 illustrations. New York: G. P. Putnam's Sons, 1925.

Mary Putnam Jacobi, M.D. A Pathfinder in Medicine. With Selections from Her Writings and a Complete Bibliography. Edited by the Women's Medical Association of New York City. Cloth. Price, $3.50. Pp. 521, with 1 illustration. New York: G. P. Putnam's Sons, 1925.

Mary Putnam's girlhood was spent in the midst of a family famous in American letters and statesmanship. It was her early ambition not only to study medicine but also to obtain the best medical education her time afforded. This striving led her to France, where she sought and gained entrance to one clinic after another, and finally even to the Ecole de médecine. On her return to America to teach and to practice medicine, she was welcomed into the Medical Society of the County of New York by Dr. Abraham Jacobi, whom she later married. The later years of the life of this pioneer woman physician are of interest, although of less significance than her entrance into the Paris Ecole de médecine. She was the first woman to be admitted to that school, and passed her examinations with the highest marks that could be bestowed. Her thesis received the bronze medal. The absorbing story is told chiefly in her own letters, which throw interesting lights on French, British and American medicine of from fifty to sixty years ago, and which are of historical importance.

The volume edited by the Women's Medical Association of New York City, to perpetuate the memory of the work done by one of its members, contains a brief outline of Dr. Mary Putnam Jacobi's career, followed by her medical papers. There are her letters to the *Medical Record*, written during her Paris school days, the numerous scientific papers she read before medical societies, and finally her articles and commencement addresses discussing the place of women in medicine.

Operative Gynecology. By Harry Sturgeon Crossen, M.D., F.A.C.S., Professor of Clinical Gynecology, Washington University Medical School. Third edition. Cloth. Price, $12.50. Pp. 677, with 887 illustrations. St. Louis: C. V. Mosby Company, 1925.

The first two editions of this valuable operative guide were received with enthusiasm and quickly became popular; the third edition will increase the demand. While the size of the book has been somewhat reduced, the number of illustrations has been materially increased. No changes have been made in the general plan, except that the section on transplantation of ovarian tissue has been advantageously reduced. It is gratifying to see that the author has included illustrations of Sturmdorf's operation of conical excision of the cervix, which has a definite place in gynecology. Another addition is an operation for the relief of sterility due to occlusion of the uterine ends of the fallopian tubes. As in previous editions, there is an extensive array of operations for retrodisplacement and prolapse of the uterus; but in the present edition the author gives his personal views and practice. In listing operations there is added a descriptive anatomic term to the personal, nondescriptive designation. This is commendable because names frequently cause confusion, especially when the origination of an operation is claimed by a number of different men, usually of different nationalities. For example, Dührssen has recently written an extensive article attempting to prove that he originated and first described a number of gynecologic operations which now bear the names of other men.

Throughout the book, Crossen repeats practical suggestions, such as the avoidance of tying sutures too tight, the bad habit of drawing the cervix outside the vagina, the value of elevating ovaries that are preserved, and the use of the cautery after excision of a piece of tissue from the cervix for diagnosis. In the treatment of carcinoma of the cervix, the combined use of radium and operation is advocated. Although the radical operation for carcinoma is thoroughly described and illustrated, the author does not fail to add that because of radium and the roentgen ray, there is today little need for the radical operation. For nearly all cases of fibromyoma of the uterus he advises active therapy in the form of operative removal, radium or roentgen ray. He points out the potential but nevertheless real dangers of all uterine myomas, regardless of their size and position.

A number of minor defects deserve attention. Some may take exception to the high evaluation of dilation and curettement, the use of stem pessaries and operations on the cervix for the cure of dysmenorrhea and the use of the curet for its "nutritive effect in underdeveloped uteri" and for "chronic endometritis." On the other hand, some things that have been omitted from the book might with profit have been included. For example, the question of anesthesia warrants attention in a book on operations. The choice of an anesthetic, especially the question of general (particularly inhalation) or local anesthesia, is as important as the preparation of the patient, the postoperative dressings and a long discourse on the matter of foreign bodies left in the abdomen. Likewise, a brief description of intestinal suturing might have been included, because once in a while the intestine may be accidentally damaged in pelvic surgery. In describing the operations for absence of the vagina, Crossen does not bring the literature down to date. He mentions that the Baldwin "operation has now been used successfully in a number of cases" and cites Schubert's report of 1914 in which the results of nine cases are stated. However, in 1923, Wagner published an interesting paper in the *Archiv für Gynäkologie* in which he reviewed the literature and mentioned that in sixty-one operations of the Baldwin-Mori type there was a mortality of 21 per cent., while in the fifty-seven cases in which operation was performed by the Schubert method there was not a single death. Notwithstanding these criticisms, the new edition of Crossen's book is indispensable as a guide for the young gynecologist and for the general surgeon.

Diseases and Deformities of the Foot. By John Joseph Nutt, B.L., M.D., F.A.C.S., Professor of Orthopedic Surgery, Polyclinic Medical School and Hospital. Second edition. Cloth. Price, $4. Pp. 309, with 105 illustrations. New York: E. B. Treat & Company, 1925.

The author has revised this work to include the extensive progress of the past decade in the diagnosis and treatment of foot conditions. The anatomy, physiology and examination of the foot are thoroughly described, and the mechanism and causes of mechanical imbalance emphasized. Weakfoot, flatfoot, clubfoot, Pott's paraplegia, cerebral paralysis, infantile paralysis, tuberculosis and gonorrheal disease are thoroughly described, and a chapter is devoted to "other aliments," including numerous important affections of the foot. There is also a chapter on foot apparel, which could be more extensive. Although a few of the opinions are open to interrogation, the book is well worth the study of the general practitioner and surgeon as well as that of the orthopedic surgeon.

Studien ueber die Anzahl der Blutplättschen beim Menschen. Akademische Abhandlung. Vorgelegt von Anders Kristenson, Unterarzt an der Medizinischen Klinik in Uppsala. Paper. Pp. 191. Uppsala: Appelbergs Boktryckeri Aktiebolag, 1924.

This monograph was presented by Dr. Kristenson as a thesis for the doctor's degree in Upsala. It represents a comprehensive study of the number of the blood platelets under somewhat varying physiologic conditions. Attempts were made to eliminate the cases that showed marked symptoms, although really about ⅓ of the persons studied were hospitalized. After a careful study of the methods previous introduced for the study of the number of the blood plates, Kristenson was led to introduce a new method, which has an approximate error of only 3 per cent. With this method, a series of investigations was undertaken to show the influence of muscular work and intake of food on the number of blood plates and to permit conclusions as to the variations at different times of the day and also from day to day. As a result of this work, Kristenson concludes that the number of blood plates per cubic millimeter for the average normal person is 294,000, there being practically no difference referable to age, except that men over 60 showed lower values than those under this age. Further, there was no appreciable difference attributable to sex, although women over 60 showed practically the same number of blood plates as did those under this age. Pregnancy, likewise, was shown to have no influence on the number of the blood plates. No attempt was made to study the pathologic variations. The work was carried out in a very thorough manner and the discussion is presented in a clear style, although as given here it is a translation from Swedish into German. It should be of interest to all those interested in the field of clinical medicine, especially to laboratory workers, who have more or less frequent occasion to make a count of these blood plates. The bibliography is full and should also prove of much assistance to those interested in the subject.

A TEXT-BOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, Ph.D., M.D., Sc.D., Professor of Physiology in the School of Hygiene and Public Health, Johns Hopkins University. Ninth edition. Cloth. Price, $6.50. Pp. 1069, with 308 illustrations. Philadelphia: W. B. Saunders Company, 1924.

The introduction of historical summaries and the presentation of findings as provisional and not final are devices of the author to foster an appreciation that physiology is a growing subject. The expansion of chemical findings in digestion and nutrition admits of a study of the tendencies of the newer work, rather than its trend. Elimination rather than condensation maintains the proper compass of the text, but elimination is not used to avoid the discussion of unsettled questions. The sections on internal secretions and the chemistry of muscle contraction have been largely rewritten. References are introduced to the more important sources. Dr. Howell's book is a standard text on its subject.

THE CHEMISTRY OF ENZYME ACTIONS. By K. George Falk, Harriman Research Laboratory, The Roosevelt Hospital. Second edition. Cloth. Price, $3.50 net. Pp. 249, with 33 charts. New York: The Chemical Catalog Company, Inc., Book Department, 1924.

This is a worthy enlargement of an excellent first edition. Necessarily, much is included that was in the first edition, for it is the groundwork for enzyme chemistry. Particularly valuable is the new chapter on enzyme reactions of tissues and tumors, which contains many charts and tables illustrating the discussion. The author has inserted in the first two chapters a review of some phases of physical chemistry that will be timely for readers who are not actively engaged along these lines. These aid in a better understanding of the chapters that follow.

PHYSICAL CHEMISTRY FOR STUDENTS OF MEDICINE. By Alexander Findlay, M.A., D.Sc., F.I.C., Professor of Chemistry, University of Aberdeen. Cloth. Price, $2.60. Pp. 227, with 39 illustrations. New York: Longmans, Green and Co., 1924.

Careful arrangement and planning make this available as a textbook for a short course in physical chemistry for medical students. The attention of the reader is often drawn to applications in the field of medicine. The mathematical treatment is rather abbreviated; for instance, the classical derivation of the gas equation is not given. The volume is not long and could be used advantageously as the basis of a short review of certain phases of physical chemistry which have applications in medicine.

LEHRBUCH DER NERVENKRANKHEITEN. Herausgegeben von Dr. Hans Curschmann, Professor, Direktor der medizinischen Universitätsklinik in Rostock, und Dr. Franz Kramer, Professor an der Universität Berlin. Second edition. Cloth. Price, 36 gold marks. Pp. 952, with 301 illustrations. Berlin: Julius Springer, 1925.

The first edition of this comprehensive textbook of neurology appeared in 1909, and since that time three of the previous collaborators, Steinert, Rothmann and Lewandowsky, have died, and new ones have been added. A textbook with Liepmann writing on aphasia, Stertz on encephalitis, Krause on neurosurgery, and many other authors discussing subjects with which their names have long been connected can safely be recommended as trustworthly, authoritative and conservative. The latter quality is rather too pronounced, as well established new ideas and procedures originating outside Germany are sometimes given little or no attention. Thus, almost a page is devoted to the treatment of trificial neuralgias with sweats, drugs and electricity, while alcohol injections are inadequately discussed in a few lines, and section of the trigeminal root is not mentioned at all. Perineural injections of saline solution for sciatica are mentioned, not the epidural ones through the sacral foramen. The value of sugar determination of the spinal fluid is not mentioned, nor is combined cistern and lumbar puncture in the diagnosis of block. We mention these occasional shortcomings because with the plethora of textbooks in many languages there is no need for new ones unless they are strictly down to date. On the whole, however, this book can be recommended as well written, well balanced and authoritative. The many good illustrations are an added valuable feature.

Miscellany

MARRIAGE AND DIVORCE IN THE UNITED STATES

A survey of marriages and divorces in 1922 has been made by the United States Bureau of the Census (Marriage and Divorce, 1922, U. S. Bureau of the Census, Washington, Government Printing Office, 1925). The federal survey of 1916 affords statistics for comparison. The data were compiled in studies from state records and by correspondence with county clerks. With records for 150 counties lacking, there were 1,040,684 marriages in the United States in 1916. Omitting the same counties from the 1922 reckoning, the number of marriages was 1,093,473. More significance can be attached to the ratio of marriages to the population over 15 years of age: 15.6 marriages per thousand in 1916 and 15.1 per thousand in 1922. The rates are given by states and counties, but show great inequalities, as a result of the ease of securing licenses in certain localities.

The divorce statistics, without returns from ninety-five counties, mostly southern, show 112,036 divorces granted in 1916 and 147,016 in 1922. Each geographic division shows an increase in the number of divorces per hundred thousand persons in the married population. The ratio is highest in the Pacific and West South Central divisions, and lowest in the Middle Atlantic division. This is partly explained by the trend of migration and partly by variations in divorce statutes. More than one fourth of the persons divorced in 1922, known to have been married in the United States, were divorced in another state than that in which they were married. The causes for divorce are tabulated with relation to the duration of the marriage. In divorces granted to the husband, adultery on the part of the wife appears at a relatively high rate during the early years of marriage; cruelty is high during the first two years; desertion is low during the first three years, but high later; drunkenness is high from the fifteenth to the nineteenth year. In divorces granted the wife, adultery on the part of the husband appears at a relatively low rate for the first four years and high from the fifth to the nineteenth year; cruelty is high for the first three years and low afterward; desertion is low the first three years and high later; drunkenness is low for four years and high thereafter; neglect to provide is high during the first four years.

MIDWIFE SURVEY IN MICHIGAN

The Michigan Bureau of Child Hygiene and Public Health Nursing has surveyed the number, patronage and preparation of the midwives of that state (*J. Michigan State M. Soc.* 24:356 [July] 1925. The data were secured from birth certificates and by interviewing 1,364 midwives. Two distinct types of midwives were encountered: the nonprofessional, a neighbor or friend who made no charge for her services, and the professional midwife. The patronage of midwives was greatest in sparsely settled districts and among the foreign born population, especially among immigrants from Finland and Poland. No professional training was claimed by 86.4 per cent. of the midwives. About the same proportion were not equipped to do midwifery, although most of the midwives interviewed appeared to be cleanly and kept clean homes. The patronage of midwives decreased relatively and absolutely between 1921 and 1924.

Medicolegal

Damages Asked for Infection of House and Bedding

(Williams v. Williams (N. C.), 125 S. E. R. 482)

The Supreme Court of North Carolina, in reversing a judgment obtained by the plaintiff, holds that the defendant as administrator of one Williams' estate was not liable for the value of the plaintiff's house and bedding alleged to have been infected with germs of tuberculosis by Williams. It appeared that Williams had gone to the plaintiff's home to wait on his sister, who was ill with influenza, and that two days later he contracted the disease and died from it combined with tuberculosis. The court says that a man is liable only for injury arising from a failure to exercise the care that characterizes the conduct of a prudent man. The law does not make any man an insurer of his act. In what respect Williams was negligent, the court was unable to perceive from a perusal of the complaint. There was no allegation that he was a trespasser on the plaintiff's premises, or that he failed, neglected or refused to exercise due care for the preservation of his health, or that by reason of any negligent act of omission or commission he damaged or endangered the plaintiff's property, real or personal. Indeed, it was not alleged that he was in the advanced stages of tuberculosis, or that he knew, and that the plaintiff did not know, that he had the disease at all. Furthermore, it should be noted that the bedclothing was burned by the plaintiff on the advice of the attending physician, and not by the direction of the board of health under the exercise of the police power.

Medical Practice Act Upheld Against Naprapath

(People v. Witte (Ill.), 146 N. E. R. 178)

The Supreme Court of Illinois, in affirming a judgment imposing a fine of $500 on the defendant for treating a woman for an ailment by a system or method known as naprapathy, without a license to do so, says that it appeared from the prosecution's evidence that the woman was afflicted with rheumatism and that the defendant gave her twelve treatments, which consisted solely of a manipulation of the spine, for which he charged her $25. He prosecuted a writ of error on the ground that the constitutionality of the medical practice act was involved, but the court does not consider it unconstitutional for any of the reasons he urged. Within constitutional limits, the general assembly is the sole judge of the laws that shall be enacted for the protection of the public health. The right of a citizen to practice medicine is subject to the paramount power of the state to impose such regulations, within the limitations of the constitution, as may be required, to protect the people against ignorance, incapacity, deception or fraud in the practice of that profession. A plan of regulation was provided in a single, comprehensive enactment applicable alike to all schools, present and future. The plan divides licenses, so far as physicians are concerned, into two classes, one of which confers the right to practice medicine in all its branches, and the other to treat human ailments without the use of drugs or medicines and without operative surgery, the licensee under such a license to be restricted by its terms to the practice of the system or method which he specifically designated in his application as the one he would undertake to practice.

The defendant contended that the act was arbitrarily discriminatory because a graduate of a medical school who has passed the examination prescribed by Section 8 may practice any system of drugless healing although he has never been examined concerning his qualifications to practice such system, while a person licensed to practice one of the systems which makes no use of drugs is not permitted to practice any other drugless method or the regular system without taking the course of study prescribed by Section 5 and passing the examination required by Section 8. But the court cannot say that the classification is either unreasonable or discriminatory, the difference between the respective rights of the two groups being based on a corresponding difference in attainments. The physician who has a license to practice medicine in all its branches has complied with the requirements for such a license, while the naprapath, or any other drugless practitioner, by his own act has restricted himself to certain remedial agents the employment of which is not regarded by the legislature as sufficient to qualify him to treat every disease by every known remedial agent possibly applicable to it.

As the practice of surgery requires the use of antiseptics, anesthetics and other drugs and medicines, the court does not consider that the act is arbitrarily discriminatory because a drugless practitioner cannot be licensed to practice surgery without taking a course in materia medica, therapeutics and practice. Again, any person, under whatever act he may have secured a restricted license, may qualify himself, under the provisions of Section 12, to practice medicine in all its branches; consequently, the act is not discriminatory in respect to that privilege as against persons holding limited licenses under prior statutes. Neither does the court see arbitrary discrimination in the fact that after the passage of the act a graduate from a medical college prior to the passage of the act may take the examination for a license to practice medicine, on proof of having completed a four years' course in a high school, while since the passage of the act a graduate of a school teaching a drugless system, who graduated prior to the passage of the act, may not take an examination for a license which will permit him to practice surgery, unless in addition to taking a course of study equal to that of medical schools he has had a two years' collegiate course or has been engaged in the active practice of his profession for five years. The graduate of a medical college after the passage of the act is required to have had a two years' course of instruction in a college of liberal arts, and the limited practitioner completing his course for license for unrestricted practice after the passage of the act should show the same preliminary education.

The court does not deem unreasonable the exemptions made in the medical practice act as to dentists, pharmacists, optometrists and persons treating human ailments by prayer or spiritual means as an exercise or enjoyment of religious freedom; nor unconstitutional the delegation of power to the department of registration and education.

Prescribing of "Internal Curative Medicine" by Osteopath—Attorney's Argument

(State v. Gibson (Iowa), 201 N. W. R. 590)

The Supreme Court of Iowa, in affirming a judgment of conviction of the defendant of the crime of practicing medicine without a license, says that the state conceded that he was licensed to practice osteopathy and he did not claim that he was licensed to practice medicine. Section 15 of Chapter 77 of the Acts of the Thirty-Ninth General Assembly prohibits osteopathic physicians "to prescribe or give internal curative medicines." The trial court in its charge to the jury defined the terms "medicine" and "internal curative medicine" in these words:

> "Medicine," as the word is herein used, is defined as any substance or preparation used in treating disease. An "internal curative medicine," as the term is herein used, is defined as a medicine that is taken inwardly for the purpose of curing or tending to cure any disease.

The definitions given by the court are in harmony with the statute, and the testimony of expert witnesses offered by the defendant as to the technical meaning of "internal curative medicine" was properly excluded by the court. Words and phrases, as a general rule, are given their usual and ordinary meaning. It is apparent that the words "internal" and "medicine" do not import a technical meaning, and it is also clear that the legislature intended that these words should be construed according to their usual and ordinary meaning. "Internal medicine" is some substance or preparation administered internally for the cure, removal or healing of some disease or condition demanding medical treatment.

The evidence in this case established the fact that the defendant wrote prescriptions for patients under his care and treatment, and that the prescriptions were filled by a pharmacist. It was also shown that the drugs or compounds were administered internally to some of his patients. Some of the ingredients administered were creosote, tincture of cinchona compounds, strychnin, sodium salicylate, simple syrup, lime water, and liquid parapectic. The medical properties of the drugs in question were stated by physicians called as witnesses, but the supreme court deems it sufficient to state that it was shown that these medicines and drugs were taken internally and for the purpose of effecting a cure for a particular ailment. The question of fact was not whether the medicine prescribed was the best or one most likely to effect a cure, or whether it would in fact cure the disease or affection for which it was given. The question to be determined on the fact side was whether the defendant prescribed and administered internal curative medicine. The evident purpose of the legislature was to prohibit osteopathic physicians and surgeons from practicing medicine or professing to heal in any other way than by the method recognized and prescribed by their school and as defined by the statute.

The testimony of the state that the defendant prescribed for certain patients medicine to be taken internally was not denied, and the county attorney in his argument to the jury stated that the defendant had access to the records and a right to introduce evidence to show that he was practicing osteopathy and not medicine. The county attorney violated no statutory prohibition when he called the attention of the jury to the state of the record. The defendant contended that the attorney violated the statute in referring to the defendant's failure to take the witness stand in his own behalf; but the record did not refer to the failure of the defendant to testify in his own behalf, and to hold that such an inference arose from the language used would require a strained construction.

Privilege Waived

(Weissman v. Wells (Mo.), 267 S. W. R. 400)

The Supreme Court of Missouri, Division No. 1, in affirming a judgment for the defendant, says that the burden of the plaintiff's claim, under the evidence, was the sustentation, in a collision of street cars operated by the defendant, of a nervous shock, causing hysteria and resultant loss of voice, never before experienced by her. But one of the physicians who had treated her was permitted, over her objection, to testify, for the defendant, that the plaintiff had suffered from hysteria and had been treated for it, by him, before the time of the occurrence of the alleged injury for which she sought to recover damages. The trial court overruled her objection to this evidence, on the ground that there had been a waiver of the privilege claimed, through the calling by the plaintiff of other physicians to testify concerning the same malady, and the supreme court is of the opinion that the privilege claimed was waived, under the circumstances.

The Layman's Understanding of the Word "Infection"

(Dickey v. Western Tablet Co. (Mo.), 267 S. W. R. 431)

The Kansas City (Mo.) Court of Appeals, in affirming a judgment for $3,000 damages in favor of the plaintiff, says that in her work, the greater part of which consisted of wrapping in bundles tablets of writing paper on the front cover of which there was a design done partly in gilt or bronze, part of her right thumb became abraded, sore and swollen, after which the whole arm swelled and became extremely painful and some of the bone of the thumb had to be removed. The first treatment mentioned was the lancing of the thumb by a physician, who then advised that a flaxseed poultice be put on it. When the poultice was removed, the plaintiff and her sister saw green and small particles of the bronze that had come out of the thumb. The court is not impressed with the defendant's contention that there is a distinction between infection and poison; that infection is caused by a germ and not poison, and its contention that the plaintiff's case was based on the theory of copper infection when there is no such thing. Whatever the medical understanding of the word infection may be, the layman's understanding of the word is that it [infection] is caused by any noxious substance inserted into the flesh, whether the substance be a germ or poison. Some of the witnesses referred to copper poison as an infection. Although, in the argument, the defendant's counsel laid great stress on the difference between infection and poison, the court fails to see in the circumstances of this case what bearing it had on it.

Society Proceedings

COMING MEETINGS

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Oregon State Medical Society, Medford, Sept. 2-4. Dr. C. L. Booth, 1021 Selling Bldg., Portland, Secretary.

ASSOCIATION FOR THE STUDY OF INTERNAL SECRETIONS

Ninth Annual Meeting, held in Atlantic City, May 26, 1925

Dr. Leonard G. Rowntree, presiding

Chemistry of the Active Principles of the Glands of Internal Secretion

E. C. Kendall, Ph.D., Rochester, Minn.: Although much work has been done concerning the physiologic activity of the ductless glands, no one has been able to prove what chemical reactions are directly influenced by any one of these glands. It is only from the suprarenal and thyroid glands that definite chemical substances of known composition have been separated and, until the compounds responsible for the activity of the other ductless glands are isolated, any conjecture concerning their mode of action remains mere speculation. Some recent work, carried on in the laboratories of the Mayo Clinic, has shown that the action of the thyroid is involved in the metabolism of hydrogen. The thyroxin molecule can exist in a reduced and an oxidized form, and the change from one to another of these forms apparently brings about the physiologic activity of the substance. The processes of oxidation in the body are greatly influenced by the functioning of the thyroxin molecule and the rate at which the cell produces energy appears to be determined by the amount of thyroxin present. Following the same reasoning, we have also shown that epinephrin is capable of reacting in much the same manner, that it can exist in an oxidized and a reduced form, and that its physiologic action appears to depend on the oscillation between these two forms. In addition, the chemical grouping that is present in thyroxin when it functions appears to be produced in epinephrin when it is acting as an oxidizing catalyst. The identification of this chemical group furnishes an hypothesis for the functioning of still other compounds, and from what we know of vitamin B and bios, it seems certain that these two also belong to this group of substances, which affect oxidation in the body by supplying the cells with an essential chemical grouping that can be utilized in the metabolism of hydrogen.

Interpretation of Disturbances in Metabolism Due to the Glands of Internal Secretion

Graham Lusk, D.Sc., Bridgeport, Conn.: Just as uric acid passed through the stage of myth and poetry, so today endocrinology fills our journals. The polyglandular theory of diabetes of von Noorden was a pioneer in this kind of writing. The establishment of accurate standards of basal metabolism in normal human beings by Du Bois enabled him to differentiate between mild, severe and very severe cases of exophthalmic goiter as having metabolic rates which were, respectively, 25, 50 and 75 per cent. above those of normal individuals. The cooperative work of Kendall the chemist, who isolated thyroxin and gave it its chemical formula, of Boothby the physiologist, and of Plummer the clinician, who have measured the quantitative effect of the substance, is a notable contribution. Furthermore, Aub, Bright and Uradil have demonstrated that the presence of the suprarenal is not essential to the maintenance of the high metabolism induced by thyroxin. Muirhead reports a 30 per cent. fall in metabolism in Addison's disease. Working with cats, Aub, Bright and Forman have shown that the presence or absence of the thyroid has nothing whatever to do with the fall in metabolism after suprarenalectomy. Boothby and Sandiford find that epinephrin exerts a specific influence, quickly increasing metabolism. Asher and Bertschi declare that a direct influence of the sex glands on metabolism does not exist, and other workers have detected only slight variations after castration. A plea is made for simplicity of attack on the problems of endocrinology, for placing the syndrome known as the "kinetic drive" outside and not inside the body.

Circulatory Disturbances in Diseases of the Glands of Internal Secretion

Dr. J. H. Means, Boston: Since all endocrine glands are concerned with metabolism, it must be assumed that they likewise are concerned with circulation. If internal secretions influence the activities of tissue cells, they must likewise influence the supply of the medium on which such activities depend. The action on circulation of the several hormones can be exerted on the heart, the vessels and the blood. To identify these effects in the patient we must depend on the inferences drawn from the factors we can measure, such as pulse rate, cardiac conduction, blood pressure, blood viscosity, blood gases, blood volume and blood flow. I shall consider the hemodynamics of hyperthyroidism and hypothyroidism and hypersuprarenalism only. The outstanding functional alteration in hyperthyroidism is an increased and in hypothyroidism a decreased rate of metabolism. The hypermetabolism of hyperthyroidism necessitates increased circulation. Several writers have shown that pulse rate increases approximately in proportion to the basal metabolic rate in thyrotoxicosis. This is in contrast to muscular work, in which the metabolism increases faster than the pulse. The minute volume of the blood flow gives a more exact impression of hemodynamic relations than the pulse rate or blood pressure. Field and Bock, at the Massachusetts General Hospital, during the past year have observed blood flow by their modification of the method of Fick in a variety of conditions. In hyperthyroidism they found an elevation in blood flow as great as or, usually, somewhat greater than that in basal metabolic rate. Similar results have been obtained by Davies, Meakins and Sands. The increase in blood flow was due much more strikingly to an increase in pulse rate than in volume per systole. This is, again, in contrast to muscular work in normal persons, in whom pulse and systolic output increase together. In myxedema a corresponding reduction was observed. Not only does rate of blood flow vary with the metabolic rate, but so too does blood volume. At least, this is indicated by some recent observations of Thompson, made at the Boston City Hospital and the Massachusetts General Hospital. It appears that the total quantity of circulating medium varies with the demand for circulation. The effect of injections of epinephrin is also of interest. Here, as in thyrotoxicosis, Field and Bock find a definite blood flow increase. The action of epinephrin, however, differs from that of thyroxin in that the blood flow increase far exceeds that of the metabolism. A 94 per cent. rise in blood flow may occur with only a 20 per cent. rise in the basal metabolic rate. There is only a little rise in mean blood pressure. It was concluded that the total peripheral effect of the epinephrin must have been one of arteriolar widening. These observations throw some light on the magnitude of the heart's task in different pathologic states. The amount of work done by the heart in propelling blood depends on the amount pumped and the amount of resistance encountered. In hyperthyroidism, if the blood flow is doubled and mean blood pressure normal, cardiac work is doubled. In hypertension, if blood flow is normal and pressure is doubled, cardiac work is likewise doubled. The familiar circulatory signs and symptoms of hypothyroidism and hyperthyroidism are easily understandable in terms of increased and decreased blood flow, and in hyperthyroidism, cardiac hypertrophy, fatigue and failure, on the basis of increased work. The hemodynamics in Addison's disease and pituitary and gonadal disturbances are not sufficiently understood to warrant discussion at this time.

Psychic Disturbances in the Diseases of the Glands of Internal Secretion

Dr. Charles MacFie Campbell, Cambridge, Mass.: Conditions are not favorable for the study of the occurrence of psychic disturbances in diseases of the glands of internal secretion. In special hospitals for psychiatric patients, endocrine disorders usually occur in too complex a setting for easy correlation with mental symptoms; in general hospitals, patients with endocrine disorders are studied more thoroughly from the point of view of metabolism than in relation to disorders of the personality. Dr. Muirhead has given an autobiographic account of his own case of Addison's disease, and Dr. Mark a full account of his own case of acromegaly. Even in these cases one hesitates before correlating the mental symptoms with either the suprarenal or the pituitary condition too closely, and should keep in mind other functions of the personality that may have helped to determine the symptoms. I have examined several groups of endocrine patients in a rather summary way. In a group of persons suffering from acromegaly there was comparatively slight modification of the central personality, the mental symptoms touched the emotional groundwork of the personality very little; one observed variation in output of energy and various slight changes of mood, either expressive of the special constitution or in reaction to the special situation in life which the disease had created. In patients of the Froehlich type, mental retardation and anomalies of behavior are frequently observed in the patients seen by the psychiatrist; in patients of the same endocrine type in general hospitals, these mental symptoms may not be observed. The mental anomalies in the Froehlich type of dyspituitarism are not different from those observed in other types of constitutional inferiority. They may be parallel manifestations of some developmental flaw and need not be secondary to the endocrine disturbance. In conditions of dwarfism of pituitary origin, one frequently meets a precocious mentality. In a group of cases in which there was hyperthyroidism, a restless activity, a tense mood and inability to concentrate were familiar symptoms. The eager talkative condition of the hyperthyroid patient has only a superficial similarity to the excited phase of a manic-depressive psychosis. In cases of hypothyroidism, one noted the familiar slowness, apparent intellectual dulness, impairment of memory and occasional depression. Frequently the slowness and dulness of the patient give the impression of depression even when the patient is not sad. The relation of disorders of the gonads to psychic disturbance needs further elucidation. The clinical material available is not large and requires careful scrutiny; little can be deduced from such a complex setting as the psychology of the Skopts, the Russian sect in which castration plays an important rôle. In regard to the pancreas, the clinical material is easily available, and a detailed study of the mentality of the diabetic patient would not be difficult to make. In the small number of cases observed for the purposes of this communication, the bright and cheerful attitude of the patients was striking. Further progress in regard to the correlation of psychic disturbances with disorders of internal glands can most satisfactorily be made starting, not from the complex material of the psychiatric clinic, but from the simple material available in the general hospital. The development in large general hospitals of an adequate psychiatric service, which is coming to be seen as a reasonable arrangement, would enable studies of the foregoing type to be made under the most favorable conditions of cooperation.

Surgery of the Glands of Internal Secretion

Dr. George W. Crile, Cleveland: On account of the lack of sufficient knowledge regarding the function of the suprarenal glands, there are no definite indications for or against surgical treatment. The amount of suprarenal tissue has been diminished with the view of the possibility of controlling certain diseases: epilepsy, cardiovascular disease, Raynaud's disease, neurasthenia and diabetes. Dr. Cushing has summarized the present status of surgery of the pituitary gland in his communication to the Third Annual Congress of the International Society of Urology. In the treatment of tumors of the thyroid gland and of hyperthyroidism, surgery has achieved one of its greatest successes.

DISCUSSION

Dr. Eugene F. Du Bois, New York: The future of the study of the internal secretions is safe if we follow the skepticism and conservatism of the speakers. Dr. Means' application of quantitative methods to the study of the changes in the circulation as affected by the endocrines is original and highly instructive. Several of the speakers quoted their animals and experiments in terms of thousands. Therapeutists would be much more conservative if they also were able to speak of their patients and observations in terms of thousands. At Bellevue Hospital it has been felt necessary to study at least a thousand patients with lobar pneumonia before coming to any conclusion regarding the efficacy of any serum or antibody extract. All of the thousand patients in each series must be followed by the same group of observers, and each alternate case must be used as a control. Even with these precautions, judgment is difficult. Yet lobar pneumonia is quite simple when compared with diseases of the ductless glands. If in lobar pneumonia each alternate case is observed as a normal control, can this be dispensed with in treating the complex diseases of the glands of internal secretion? If 1,000 cases are required for pneumonia, how many more should we study for each endocrinopathy? Let us recognize that all of us have erred in these respects, and let us remember the example of lobar pneumonia when we read therapeutic reports in the journals, and especially when we read them in the advertisements which fill the morning's mail.

The Effect of the Glands of Internal Secretion on the Growth of the Body

Dr. Montrose T. Burrows, St. Louis: We have investigated the factors regulating the growth of body cells by means of the tissue culture. These cells cannot grow in the normal fluid of the body (blood plasma) except when they are crowded together in a small stagnant quantity of this fluid. Isolated cells can be made to grow in this fluid by adding an extract of any actively growing embryonic or tumor tissue. These factors of cell crowding, reduction in the amount of medium and stagnation are necessary because the growth of body cells depends on a certain concentration of a primary product of their oxidation reaction. This substance is soluble in body fluid and cannot be retained by the cell. Its concentration is determined by the environment. This product of the cell's oxidation (the *archusia*) is concentrated sufficiently to stimulate growth only when a considerable number of cells are crowded into a small stagnant area of medium, which is supplied with oxygen. The independent growth of cells in the culture is the result of removing them from the body and their circulation to a small stagnant layer of medium. This growth does not occur at once after their removal, but always after a latent period. This latent period is the time necessary for the accumulation of the growth stimulus.

The only tissue in the body that is sufficiently cellular and stagnant to manufacture and maintain its own *archusia* at a concentration necessary for independent growth is cancer. The growth of the egg and normal organism is dependent always on a source of this growth stimulus from the outside. Growth thus becomes regulated and dominated by this external source. We have sought for this source in the glands of internal secretion and foods. Solutions containing this growth stimulus act as vitamin B, when fed to rats. While growth stimulating substances have been found in the ovary and hypophysis, there is no evidence that they are ample to maintain the growth of the body. They act as subsidiary factors regulating and changing the action of the vitamins which are the chief source of the growth stimulus.

The Parathyroid Hormone

J. B. Collip, Ph.D., Edmonton, Alta.: The experiments of MacCallum and Voegtlin, Salveson and Luckhardt appeared to us to furnish definite evidence that the chief function of the parathyroid glands is to control, in some profound manner, the metabolism of calcium. We were strengthened in this opinion because we were able to confirm the finding of others that thyroparathyroidectomized dogs could be kept alive and in normal health, even when fed meat, if calcium therapy of a sufficiently vigorous nature was resorted to. In view of this, it was our conviction that an extract could be made from fresh parathyroid glands which would completely replace the excised parathyroids of dogs. Our preliminary experiments were unsuccessful. Oct. 8, 1924, however, a successful experiment was performed. An extract made by hydrolysis, with weak acid, of the fresh glands of the ox was found to contain the active principle of the glands and the use of such an extract in adequate dosage controlled parathyroid tetany. Since this date, more than 300 animal experiments have been carried out in which active parathyroid extracts have been used. Our chief conclusions are as follows: The hormone which it is believed represents the essential internal secretion of the parathyroid glands is present in extracts of the fresh glands of the ox which have been made by a process of weak acid hydrolysis. The hormone contained in the acid hydrolysate has been separated from a large part of the coexistent matter and has been obtained in a stable form and in a fair degree of purity. The hormone appears to be either a fairly complex protein derivative or a substance intimately associated with such a type of compound. Parathyroid tetany in dogs has been prevented or controlled by use of the extract. It has been shown that the injection of the active extract into a parathyroidectomized dog in a state of tetany causes not only relief of the tetany but also a definite increase in the level of blood serum calcium. The injection of the extract into normal animals was followed by an increase in the level of blood serum calcium. Repeated injections, at intervals of a few hours, of the extract into normal animals resulted in a condition of profound hypercalcemia (blood serum calcium values as high as 23 mg. per hundred cubic centimeters). The condition of profound hypercalcemia induced in either normal or parathyroidectomized dogs by repeated injections of the extract at short intervals has invariably caused death when the injections have been continued. In such cases death has occurred as a rule in from forty-eight to seventy-two hours. The injection of the active extract into normal animals has been followed by a typical blood serum calcium curve. The degree of hypercalcemia produced by a single injection of the extract into normal dogs has been found to stand in direct relation to the dosage. A method of physiologic standardization of active parathyroid extracts has been developed. The definition of the provisional unit that has been adopted is: one one-hundredth of the amount of extract that will produce an average increase of 5 mg. in blood serum calcium in a normal dog of 20 kg. weight, over fifteen hours. The extract will have a definite use in clinical medicine. Few clinical data have been obtained, but sufficient evidence is already available to indicate that the active principle of the parathyroid will be a specific in essential hypoparathyroidism. It is possible also that it will be a valuable adjunct in the therapy of certain other conditions.

Puberty as a Factor in the Chemistry of Bone During Growth

Frederick S. Hammett, Ph.D., Philadelphia: The pubertal adjustment is an important phase in physiologic development. Evidences of bodily change at this time are many. While the basis of these changes is obviously chemical, their nature is as yet unknown. Puberty is a significant factor in the differentiation of bone during growth. I have studied the humerus and femur of a series of male and female albino rats, aged 23, 30, 50, 65, 75, 100 and 150 days. The bones of ten or more animals of each sex at each age were analyzed for their water, ash, organic matter, calcium, magnesium and phosphorus content. There was thus obtained a record of the differential development, from the chemical point of view, of the bones from before weaning through to adult life. The pubertal period in the albino rat lies between the ages of 50 and 75 days. Increase in the weight of bone with age is accomplished by increments of ash, organic matter and water. The absolute amount of ash and organic matter increases continuously with age. Water, on the other hand, is *lost during the growth* period from 65 to 75 days of age. During the later periods, bone growth is accompanied by increments of water as during the preceding periods. It is clear that puberty exerts a special influence on the water exchange of the osseous system. The rates of increment in the various constituents, in terms of growth capacity, show certain sex, systemic and constituentally specific dissimilarities in direction and degree during the growth period from 23 to 65 days of age. At 65 days of age, however, or the culmination of puberty, there occurs an abrupt ironing out of these differences, with consequent equilibration and stabilization of chemical differentiation to a level which is maintained thereafter, and which is practically uniform for all factors. From this it is clear that the period prior to and up to the culmination of puberty is a period of constituental differential development, which is brought to an end by the climax of puberty at 65 days of age.

Endocrine Factors Influencing Bodily Vigor

Dr. R. G. Hoskins, Columbus, Ohio: White rats are placed in small retiring cages from which they have access at will to run in revolving cylinders a foot in diameter. The revolutions are registered by means of a ratchet counter. The daily records are a good criterion of the vigor of the animals. Healthy young adults average about 15,000 revolutions a day. One such animal ran approximately 950 miles in 120 days. Removing both suprarenal glands resulted in a permanent marked adynamia in about one third of the cases. Another third showed partial recovery, and the remainder complete recovery. Incomplete data indicate that the recovery was due to hypertrophy of suprarenal cortex rests. The parathyroids were removed from a few animals. In about a fourth of the cases, death followed. The other three fourths showed no significant diminution in activity. Thyroidectomy in a few cases has resulted in a marked depression of activity. Thyroid feeding in the two cases studied caused marked accentuation of activity. The attainment of puberty is marked by a considerable augmentation of activity in both sexes. In the female it was found, in confirmation of earlier observers, that the activity takes on a well defined cyclic character related to estrus. Removing the ovaries caused marked diminution of activity and discontinuance of the cyclic character. Feeding glycerin extracts of whole ovary has resulted in no significant augmentation of activity. Castration of young adult males reduced the activity about 80 per cent. Testis grafts have proved ineffective in restoring the activity, as have also thyroid feeding and orchitic extracts. Starvation for four day periods is the only method that has been found effective in augmenting the activity.

Roentgenographic Study of the Sella Turcica in Abnormal Children

Drs. Murray B. Gordon and A. L. Loomis Bell, Brooklyn: This study is based on the roentgenographic examination of the sella turcica in sixty-four children suffering from abnormal conditions, including mongolian idiocy, myxedema, hypopituitarism, hypothyroidism, hydrocephalic idiocy and other conditions in which there was a gross deviation from the normal. As a control, we used a former study of the sella in 104 normal children. In normal children the sella can be classified into three groups, circular, oval and flat, with modifications in each group. There is a marked variation in the height and length of the sella according to age. There is a comparatively rapid increase in both measurements in the first two years of life, with a gradual yet irregular increase from 2 years to 12 years of age. The shape and size of the sella have no relation to the size of the head. The sex does not appear to influence the shape or formation of the sella. In the abnormal children, round and oval sellas were found in equal proportions (42 and 43 per cent.). By comparing this with the incidence found in the series of normal children and with that found in Camp's study of 1,000 sellas, mostly of adult heads, in which he used our classification, we note no essential difference in the incidence of the three shapes of turcica in normal and abnormal children. The circular and oval shaped sellas predominate and the flat occur in from 10 to 15 per cent. of those examined. Timme, a few years ago, reported that in twenty-three out of twenty-four sellas of mongolian idiots he found "an excavation under the anterior clinoid processes and presumably under the olivary process and optic groove, and the excavation communicated with the anterior portion of the fossa itself." As corroborative evidence that this was abnormal, he offered a sella from a Chinese girl which did not show the excavation. Because of this, he asserted that the presence of this excavation was pathognomonic of mongolian idiocy. In our previous paper, independently of Timme, we stated that "in some instances the anterior clinoid processes are raised above the level of the middle clinoids and are very long. In the latter cases a slit is seen running anteriorly from above the middle clinoids under the anterior clinoids. This slit is in no way a part of the sella." Studied from the point of view of the presence or absence of this slit or excavation, we find that it may be present in two forms, either covered by the lesser wings of the sphenoid, which throw a shadow across the excavation, or else it may be uncovered. By studying the sellas and photographs of actual tracings, it is impossible to difference between the sellas of mongolian idiots, myxedematous idiots, or morons, or even between those of abnormal and normal children. The uncovered sella, the type described by Timme as being characteristic of mongolian idiocy, was found in 33 per cent. of abnormal children and in 39 per cent. of normal children. The covered excavation was present in 48 per cent. of abnormal and in 38 per cent. of normal children. The excavation was absent in only 18 per cent. of abnormal children and in 22 per cent. of normal children. Irrespective of the mental condition of the child, the excavation was demonstrable, in either one of the two forms, in 79 per cent. of all sellas studied. We are therefore justified in concluding that the presence or absence of the excavation has no clinical, diagnostic or etiologic value in any of the conditions studied in this series, and that it is not pathognomonic of mongolian idiocy or of any other kind of idiocy. It is a normal formation of the sella turcica. The same variations in size are noted in abnormal children as in normal. Apparently the type of disease studied in this series has no effect on the size of the sella.

Thermogenesis as the Fundamental Function of the Suprarenal Cortex and Medulla

Dr. C. E. de M. Sajous, Philadelphia: The function I attributed in 1903 to the suprarenals, that of supplying a secretion that fulfils the rôle of a reducing substance deemed necessary by Bohr in 1891 and other physiologists, to account for the ability of the blood to deplete the pulmonary air of its oxygen in strangulated animals and in high altitudes, has in recent years been sustained by a large number of physiologists, pharmacologists and clinicians, while all observers who have overlooked this function have failed to indicate any other fundamental rôle for the suprarenals. The functions of the suprarenal cortex are unknown at present but are intimately connected with those of the suprarenal medulla in the respiratory process. Biochemical, physiologic and clinical data show that the medullary secretion, by acting as an oxidizing and catalytic enzyme (oxidase—catalase) with the phospholipoid lecithin of the cortex in the tissues at large, causes the liberation of heat energy therein (thermogenesis) while another familiar constituent of the suprarenal cortex, cholesterol, acts as moderator of the thermogenic process by inhibiting, as needed the thermogen lecithin. The red corpuscles which, as is well known, contain both lecithin and cholesterol, carry these lipoids with their oxidizing enzyme adrenoxidase to the tissues to sustain thermogenesis therein. Heat liberation is the process to which the phenomena known as "heat production," "fever," "hyperthermia," etc., should be attributed, "oxidation" meaning mainly that of the phosphorus in the phospholipoid lecithin which all tissues are known to contain in some kindred form. The purpose of this thermogenic process is to activate the various enzymes, proteolytic, lipolytic and others, which the tissue cells as well are known to contain and which sustain the metabolic process of the tissue cells by acting hydrolytically on the food materials assimilated by the tissues.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

169: 625-780 (May) 1925

- Carcinoma and Sarcoma of Esophagus: Plea for Early Diagnosis. C. Jackson.—p. 625.
- *Pulmonary Neoplasm: Three Cases. D. Greenberg, New York.—p. 648.
- *Intermittent Complete Heart Block and Ventricular Standstill. L. T. Gager and H. E. B. Pardee, New York.—p. 656.
- Goiter Heart. N. B. Foster, New York.—p. 662.
- *Eventration of Diaphragm, Case Emphasizing Value of Movements of Costal Margins in Diagnosis. E. C. Reifenstein, Syracuse, N. Y.—p. 668.
- *Experimental Studies on Entrance of Bile into Duodenum. A. Winkelstein and P. W. Aschner, New York.—p. 679.
- *New Method for Studying Pure Gastric Secretion. A. L. Garbat, New York.—p. 687.
- Neoplastic Nature of Leukemic Process. A. Piney.—p. 691.
- *Heterotopia of Suprarenal in Liver and Kidney. C. V. Weller, Ann Arbor, Mich.—p. 696.
- *Primary Meningeal Form of Systemic Blastomycosis. C. M. Wilhelmj, St. Louis.—p. 712.
- *Primary Inoculation Tuberculosis of Skin with Metastasis to Regional Lymph Nodes. J. H. Stokes, Philadelphia.—p. 722.
- *Epidemiology of Pemphigus Neonatorum. R. R. Mellon and D. W. Caldwell, Rochester, N. Y.—p. 736.
- Nystagmus: Seat of Origin. I. L. Meyers, Los Angeles.—p. 742.

Pulmonary Neoplasms.—A report of three cases of primary pulmonary neoplasm is presented by Greenberg, together with a discussion of the increased frequency of this disorder.

Intermittent Complete Heart Block.—A case of intermittent complete auriculoventricular heart block is reported by Gager and Pardee. Syncopal attacks during the complete block are found to be due to ventricular standstill, varying from six to twenty seconds' duration. Such attacks followed the administration of digitalis. The physiologic factors bearing on cessation of the ventricular beat are discussed, and it is concluded that in this instance changes in nodal and ventricular rhythmicity appear to be the governing factor in producing standstill, while definite vagus and auricular influences are absent.

Eventration of Diaphragm.—Reifenstein reports a case of eventration of the diaphragm, discusses the literature in relation to the same and calls special attention to the aid given by the study of the movements of the costal margins in diagnosis.

Studies on Contraction of Gallbladder.—No evidence was found by Winkelstein and Aschner of spontaneous contractions of the gallbladder in the dog, either under anesthesia or when fully recovered. It is possible to empty the gallbladder by manual expression after the sphincter of Oddi is relaxed, with the peritoneal cavity open or closed. The respiratory squeeze, that is, the increase in intra-abdominal pressure at the end of inspiration, also effects an expulsion of bile into the duodenum from the gallbladder when the sphincter of Oddi is relaxed. Direct or reflex stimulation of the gallbladder, whether it be by faradization, drugs, hormones, chemicals, or mechanical means, does not cause a contraction of the gallbladder, or an appreciable change in size, or any emptying, in the experimental animal under anesthesia. In an animal, however, which has fully recovered from the operative procedures, following the instillation of 25 per cent. magnesium sulphate or the passage of gastric chyme into the duodenum, and not after physiologic sodium chlorid solution, there is an entrance of bile from the gallbladder into the duodenum.

Studying Gastric Secretion.—Garbat asserts that the two-tube system, with physiologic phenomenon that gastric secretion takes place in response to duodenal feeding, offers a new method whereby one can collect large quantities of pure gastric juice, as soon as it is secreted, during the act of digestion, and without admixture of any test meals. The instigated gastric secretion differs with various articles of food, and continues as long as the particular food contents remain in the duodenum.

Suprarenal Hepatic Heterotopia.—Three new cases of suprarenal hepatic heterotopia are added by Weller. Suprarenal heterotopia is usually associated with a persistent thymus and other evidences of the thymicolymphatic constitution, and frequently with the asthenic habitus. It is an evidence of constitutional pathology. In two of the thirteen renal cases reported diabetes was the cause of death. In accord with what is known of this constitution, most of these suprarenal heterotopia patients have died at a relatively early age. The incidence of tuberculosis and other infections is high.

Blastomycotic Meningitis.—Six cases of blastomycotic meningitis are analyzed by Wilhelmj, one of these being his own case. Skin lesions were absent in all cases; bone or joint involvement, so common in ordinary generalized blastomycosis, was not present in a single case; necrosis and destruction of the skull bones, apparently an important etiological channel for meningeal infection in systemic blastomycosis, was not a factor in these cases; the organism was found in the spinal fluid of four cases; complete necropsies were performed in four cases (in two of these no mention is made of blastomycotic lesions in any other organs, the lungs were involved in one and the mouth, pharynx and esophagus in the fourth); the two incompletely necropsied cases gave no clinical evidence of pulmonary or other organic invasion.

Inoculation Tuberculosis of Skin.—The literature is summarized by Stokes and ten cases described of inoculation tuberculosis of the skin with extension to lymph nodes. These cases suggest that reaction to tuberculous infection and its sequelae varies with the individual and with circumstances, rather than entirely with previous infection and acquired resistance. The lesions described as primary are often inconspicuous, may be far from the site of metastatic lymphatic lesions, and are often in old traumatic scars. A history of exposure to tuberculosis may not be obtainable. The apple-jelly nodule, or tubercle in the cutis and subcutaneous fat, is the elementary essential lesion. Its identification by diascopic pressure is the first aid to a diagnosis. Excision of the primary focus, even if it is only a scar, and of its secondary lymph nodes, is necessary to the best treatment, and should be carried out whenever possible. Radium controls the lymphatic metastatic lesion and is preferable to the roentgen-ray after excision, in the treatment of the excision scars and drainage areas. Large doses, properly screened, should be used, but not carried to excess. Ultraviolet rays from the quartz lamp can be used locally with pressure, in lesions that cannot be excised, and should be employed systematically in the form of general irradiation and artificial heliotherapy. Moderate doses of neo-arsphenamin, which contribute to a good result in cases of tuberculids, and in some cases of tuberculous adenitis, may be used in the treatment of primary inoculation tuberculosis, as part of the general management of the case.

Etiology of Pemphigus Neonatorum.—The fact that *Staphylococcus aureus* is the probable cause of pemphigus neonatorum, Mellon and Caldwell point out, opens the possibility that the milk may in certain instances be a source of such infection, namely, when the cocci they contain are virulent for the infant. It is not contended, however, that the observations so far made are sufficient to establish [illegible] milk as a source of such infection. Segregation [illegible] mothers, who have been tentatively regarded [illegible] staphylococci virulent for infants, has been [illegible]

American Journal of Obstetrics [illegible], St. Louis

9: 593-738 [illegible]

- *Gangrene of Extremities Follo[illegible] perium; Embolectomy. A. [illegible]
- New Axis Traction Handle [illegible] land.—p. 606.
- Combined Radium Th[illegible] Uterus. W. T. D[illegible]

Histopathologic Changes in Uterine Carcinoma Treated with Radium. P. Klemperer, New York.—p. 619.
*Ovarian Transplantation. I. Kross, New York.—p. 628.
End-Results with Emmet-Baldwin Operation for Procidentia. G. Gibson, Brooklyn, New York.—p. 637.
Suggested Biophysical *Interpretation of* Cancer. G. W. Crile, Cleveland.—p. 642.
Treatment of Inoperable Cervical Carcinomata with Measured Doses of Roentgen Rays and Radium. H. Schmitz, Chicago.—p. 644.
Radiation Therapy of Carcinoma of Uterus. U. V. Portmann, Cleveland.—p. 658.
*Rôle of Radium in Treatment of Cancer of Cervix. T. E. Jones, Cleveland.—p. 662.
Newly Modified Method for Determining Area of Pelvic Inlet by Roentgen Ray Pelvimetry. H. Thoms, New Haven, Conn.—p. 667.
*Insulin and Glucose Treatment of Excessive Vomiting of Pregnancy. W. Thalhimer, Milwaukee.—p. 673.
**Three Types of Ureteral Pathology with* Unusual Clinical Features. E. H. Richardson, Baltimore.—p. 678.
Pseudocartilaginous Cyst of Ovary. W. E. Darnall, Atlantic City, N. J.—p. 683.
Rupture of Uterus; Two Cases, with Recovery Following Hysterectomy. J. K. Quigley, Rochester, N. Y.—p. 685.
Short Umbilical Cord as Factor in Dystocia. T. W. Adams, Portland, Ore.—p. 690.
New Uterine Cannula for Use in Rubin Test. E. Gladstone, New York.—p. 695.
Provisions for Maternity Care in United States. C. C. van Blarcom, New York.—p. 697.
What New York State is Doing to Reduce Maternal Mortality. F. McKay, Albany, N. Y.—p. 704.

Embolectomy for Gangrene of Extremities.—The lesson taught by perusal of published cases, Stein says, is that where there is embolic obstruction of a main artery, embolectomy should be performed as promptly as possible, for it has been shown that the sooner this operation follows the onset of symptoms the better are its chances for success. While the unsuccessful embolectomies at the present time greatly outnumber the successful ones, the value of this procedure should not be underestimated, for its timely application has brought recovery to a number of patients, and in cases of complete obstruction of the larger vessels it offers the only chance of saving the affected limb or perhaps averting a fatal outcome.

Ovarian Transplantation. — An experimental study is reported on by Kross of transplantation of immature rat ovaries into sexually mature castrated rats. Briefly, the results show that wherever there is an indication for ovarian grafting, as in congenital absence or hypoplasia of the internal genitalia, bilateral castration in young women, and similar cases, better results might be obtained by using healthy, young, immature ovaries.

Radium Treatment of Cervix Cancer.—According to the statistics given by Jones 33 per cent. of the cases treated four or more years ago, 22 per cent. of those treated three or more years ago, 40 per cent. of those treated two or more years ago and 60 per cent. of those treated less than two years ago are known to be symptom free. These results justify the continued use of radiation therapy for carcinoma of the cervix.

Insulin and Glucose for Vomiting of Pregnancy.—Thalhimer has had ten cases in which the use of insulin combined with the administration of glucose in the treatment of excessive vomiting of pregnancy has rapidly alleviated the symptoms and acidosis.

Ureteral Stricture.—Three types of ureteral stricture are reported by Richardson. The first was of traumatic origin, and was complicated by a ureterovaginal fistula; but the kidney was saved by successfully combining a plastic operation with proper dilatation of the stricture area. The second case illustrates the common type of inflammatory stricture in aggravated form, involving the lower ureteral segments and presenting the interesting clinical picture of recurrent attacks of renal colic on the side with scarcely perceptible damage to the urinary tract. Here, again, cure was effected by proper dilatation of the stricture areas. The third case presented a puzzling diagnostic problem, which happily was solved prior to the operation. It illustrates, in addition to the interesting congenital anomaly, an inflammatory stricture at the ureteropelvic junction, which led to the formation and incarceration of an ureteral calculus and associated pathology requiring nephrectomy. The demonstration of ureteral stricture in each instance as a pathologic entity is absolute.

American Journal of Ophthalmology, Chicago

8: 433-512 (June) 1925

Gonioscopy. M. U. Troncoso, New York.—p. 433.
Eosinophilia and Etiology of Parinaud's Conjunctivitis. S. R. Gifford, Omaha.—p. 450.
Apparatus for Quick and Accurate Location of Meridians of Astigmatism. C. E. Ferree and G. Rand, Bryn Mawr College, Pa.—p. 453.
Traumatic Dislocation of Lens Into Anterior Chamber. V. Derkac, Zagreb, Jugoslavia.—p. 456.
Treatment of Exophthalmic Goiter. L. D. Brose, Evansville, Ind.—p. 459.
Neuropathic Conjunctivitis. W. E. Shahan, St. Louis.—p. 461.
Osteoma of Orbit. C. A. Young, Roanoke, Va.—p. 464.
Nontraumatic Holes of Fundus. H. W. Scarlett, Philadelphia.—p. 467.
Modification of Sweet Localizing Apparatus. W. E. Roberts, Charlotte, N. C.—p. 470.
Intra-Ocular Steel Invasions Occurring in Ten Years' Practice. F. Allport, Chicago.—p. 471.
Transient Ring Opacity of Cornea. H. S. Gradle, Chicago.—p. 483.
Suction Instrument for Extraction of Cataract. F. W. Dean, Council Bluffs, Iowa.—p. 848.
Double Optic Atrophy Secondary to Brain Tumor. H. L. Libby, Denver.—p. 485.
Congenital Anophthalmus. H. L. Hilgartner, Austin, Texas.—p. 485.
Red Toric Lens for Studying Diplopia. C. Berens, New York.—p. 485.

American Journal of Public Health, Albany, N.Y.

15: 487-582 (June) 1925

New Jersey's Yardstick for Health Officers. R. S. Patterson, Trenton, N. J.—p. 487.
Future Training of Child Hygiene Workers. J. Sundwall, Ann Arbor, Mich.—p. 502.
Sanitary Engineering as a Career. W. B. Bizzell, College Station, Texas.—p. 509.
Teaching Hygiene. J. E. Rush, Lexington, Ky.—p. 520.
Sociological Prerequisites for a Public Health Curriculum. T. D. Eliot, Chicago.—p. 522.
Education of Health Administrator. J. W. Trask, Buffalo, N. Y.—p. 526.
Sanitarian's Organization: Its Aims and Accomplishments. M. Duggan, Austin, Texas.—p. 531.
Resistance to Phenol of Staphylococcus Aureus. G. F. Reddish, Washington, D. C.—p. 534.

Annals of Otology, Rhinology and Laryngology, St. Louis

34: 353-676 (June) 1925

Osteomyelitis of Cranial Bones Secondary to Paranasal Sinus Operations. H. I. Lillie, Rochester, Minn.—p. 353.
Fusiform Bacilli and Spirochetes—Occurrence in Putrid Ethmoiditis. I. Pilot and F. L. Lederer, Chicago.—p. 366.
Laryngeal Pathology of Cretinism. E. M. Josephson, New York.—p. 376.
Recognition of Sinus Disease in Children. R. A. Barlow, Madison, Wis.—p. 378.
Congenital Stenosis of Larynx in Three-Year-Old Child. C. F. Theisen, Albany.—p. 384.
Septum-Ethmoid Complex in Relation to Chronic Catarrhal Otitis Media. J. A. Babbitt, Philadelphia.—p. 389.
Present Status of Electrotherapeutic Measures Used in Practice of Otolaryngology. J. C. Beck and H. L. Pollock, Chicago.—p. 403.
Certain Forms of Chronic Sinusitis. R. H. Skillern, Philadelphia.—p. 415.
Medical and Surgical Treatment of Laryngeal Tuberculosis, Including Preliminary Report on Direct Injection of Tuberculin into Larynx. F. R. Spencer, Boulder, Colo.—p. 424.
Literature on American Laryngological, Rhinological and Otological Society. H. W. Loeb, St. Louis.—p. 437.
Medical Remedies for Control of Hemorrhage. S. G. Higgins, Milwaukee.—p. 474.
Comparative Value of Transillumination and Roentgenography in Diagnosis of Maxillary Sinus Disease. H. H. Briggs, Asheville, N. C.—p. 485.
Tonsillectomy and Adenoidectomy in Selected Cases During Periods of Primary and Secondary Infections. F. T. Clark, Westfield, Mass.—p. 491.
Lateral Sinus Thrombosis Presenting Unusual Variation—Streptococcemia, Transfusion, Recovery. J. A. Babbitt, Philadelphia.—p. 505.
Effects of Septal Operations on Hearing. D. H. Trowbridge, Fresno, Calif.—p. 513.
Traumatic Deafness as Result of Retrusion of Condyles of Mandible. J. C. Decker, Sioux City.—p. 519.
Otitic Brain Abscess. C. F. Yerger, Chicago.—p. 528.
Streptococcus Mucosus as Etiologic Factor in Otitis Media and Mastoiditis. B. H. Abrahams, Brooklyn, and Z. A. Bonoff, New Haven, Conn.—p. 554.
Value of Vestibular Examinations in Intracranial Localization Cases. F. C. Levitt, San Francisco.—p. 574.

Atlantic Medical Journal, Harrisburg, Pa.

28: 553-620 (June) 1925

Etiology of Acute Pancreatitis. L. H. Landon, Pittsburgh.—p. 553.
Medical Aspects of Acute Pancreatitis. T. McCrae, Philadelphia.—p. 555.
Surgical Aspects of Acute Pancreatitis. J. B. Deaver, Philadelphia.—p. 558.

Functional Cardiac Disorders. A. H. Colwell, Pittsburgh.—p. 561.
Nephritis in Children. J. G. Logue, Williamsport.—p. 564.
*Study of Five Hundred and Fifteen Cases of Saint Vitus' Dance. C. W. Burr, Philadelphia.—p. 568.
Nose, Throat and Larynx in Thyroid Disease. R. Nebinger, Danville. —p. 573.
Bacteriologic Analysis of Acute Mastoid Disease. M. S. Ersner, Philadelphia.—p. 578.
Pathologic Physiology of Degenerative Neuroses and Psychoses. F. X. Dercum, Philadelphia.—p. 581.
*Prevention and Abortion of Boils and Carbuncles. G. E. Pfahler, Philadelphia.—p. 586.
*Myasthenia Gravis. T. Diller, Pittsburgh.—p. 588.
Pneumococcic Cerebrospinal Meningitis; Recovery. C. E. Ervin, Danville.—p. 590.

Chorea.—Among the 515 cases of chorea analyzed by Burr, Ninety-two near relatives (parents, uncles, aunts, siblings and first cousins) had suffered from it. Rheumatism is the most frequent disease recorded as occurring in the families—more frequent than chorea itself. The most frequent disease recorded was tonsillitis. In ninety-three patients the tonsils had been removed at some time, for one reason or another. Burr says that this procedure probably is of no value in preventing or curing chorea. Eighty-four patients gave a definite history of acute rheumatism, and in nineteen the chorea came on during convalescence. In others, the chorea preceded the rheumatism; in a few instances the rheumatism came only after several attacks of chorea. In fifty-nine patients there was a positive history of growing pains. Burr feels that tonsillitis, growing pains, and acute articular rheumatism are closely allied, if not different manifestations of the same poison. Therefore, it is justifiable to say that the person who is attacked by Saint Vitus' dance is of a rheumatic diathesis. This belief is strengthened by the fact that the one constant gross lesion found at necropsy is vegetative endocarditis.

Prevention of Boils.—As a result of his experience and observations, Pfahler's recommendations to those who are subject to boils are as follows: (1) Test the urine for sugar. (2) If practical, test the blood for excess of sugar. (3) Immediately on the appearance of a boil, reduce carbohydrate food to a minimum. It may be well to omit the next meal entirely. This reduction in carbohydrates should continue so long as there is a tendency to boils. Sugar and sweets especially should be avoided. Drink plenty of water. (4) All sources of focal infection should be removed as rapidly as possible. (5) At the first sign of a pimple, within an hour, if possible, apply tincture of iodin three or four times locally to the top of this lesion. Allow the tincture of iodin to dry between applications. (6) Massage the area thoroughly for five or ten minutes, three or four times daily. For this purpose, soap should be used for about five minutes (at least twice daily), then follow with massage with mentholated petrolatum. The soap washes the oil away, but unless some oil is replaced in the skin, it will become dry and itching.

Myasthenia Gravis.—Diller reports two cases of this disease in which apparent cure was obtained by rest, massage and calcium lactate.

Boston Medical and Surgical Journal

192: 1195-1238 (June 18) 1925

Immunity in Its Relation to Problem of Practical Medicine. H. Zinsser.—p. 1191.
Cancer and Sun. F. Bryant, Worcester.—p. 1203.
*Gastric and Duodenal Ulcer Variously Treated. T. C. Greene, Boston.—p. 1207.
*Digestibility of Oleomargarine. A. D. Holmes, Washington, D. C. —p. 1210.
Hip Fractures. F. J. Cotton.—p. 1212.

Results of Treatment of Gastric and Duodenal Ulcer.—A study of the results of medical and surgical treatment of gastric and duodenal ulcers at the Peter Bent Brigham Hospital has been made by Greene. Of 117 patients treated surgically and followed, 79.5 per cent. obtained complete relief, 14.5 per cent. obtained partial relief, 5.1 per cent. obtained no relief, and 0.9 per cent. suffered a hemorrhage. All those obtaining no relief underwent a second operation which was successful in the four cases that replied to follow-up letters. In 259 consecutive operations on elective and uncomplicated cases of gastric and duodenal ulcers, there were five deaths, a mortality of 1.9 per cent.

Digestibility of Oleomargarine.—Twenty digestion experiments were conducted by Holmes with human subjects to determine the digestibility of typical samples of three grades of oleomargarines containing animal fats. The three grades of oleomargarine contained different amounts of milk fat which was supplied from butter, cream or milk. The coefficients of digestibility obtained for the oleomargarine under consideration were 97.2 per cent., 93.4 per cent., and 96.8 per cent. Added evidence was obtained for the belief that edible fats do not exercise any marked effect on the digestibility of the other constituents of the diet. The subjects reported that they experienced no physiologic disturbance during any of the test periods with oleomargarine. And since the diet produced no laxative effect, it may be concluded that the limit of tolerance is in excess of 125 gm., the highest average amount eaten per man per day in any of the series of experiments here reported.

192: 1239-1288 (June 25) 1925

Newer Methods of Intravenous Therapy in Septicemias of Otitic Origin. C. T. Porter, Boston.—p. 1239.
Deficiency Diseases. F. van Nuys, Weston.—p. 1242.
*Oxygen Consumption in Dementia Praecox. J. C. Whitehorn and K. J. Tillotson, Waverly.—p. 1254.
Accessory for Transfusing of Infants and Children. D. S. Adams, Worcester.—p. 1256.
New Nail Drill. J. R. Knowles, Boston.—p. 1256.

193: 1-42 (July 2) 1925

Some Unusual Cases of Acute Appendicitis. S. G. Pavlo, Boston.—p. 10.
Preventive Medicine and General Practitioner. C. F. Wilinsky, Boston. —p. 6.
Deep Roentgen-Ray Therapy in Malignant Tumors of Bladder. I. N. Kilburn, Springfield, Mass.—p. 11.

Oxygen Consumption in Dementia Praecox.—Whitehorn and Tillotson add their observations to the accumulating indications that persons with the mental disorder diagnosed dementia praecox tend as a rule toward significantly slower rates of oxygen consumption, under approximately "basal" conditions, than would normally be predicted, and that these slow rates are quite persistent in individual cases.

Canadian Medical Association Journal, Montreal

15: 581-684 (June) 1925

Scientific Method in Medicine. A. Primrose, Toronto.—p. 581.
Management of Gastric and Duodenal Ulcers. R. R. Graham, Toronto. —p. 589.
*Present Status of Hepatic Efficiency Tests. E. M. Watson, London, Canada.—p. 593.
*Two Cases of Adolescent Myxedema Accompanied by Nephrosis, and in One Case Tetany. J. R. Davidson, Winnipeg.—p. 598.
Diabetic as Surgical Risk. E. H. Mason, Montreal.—p. 601.
Goiter from Medical Standpoint. J. Phillips, Cleveland.—p. 605.
Surgical Management of Goiter. R. V. B. Shier, Toronto.—p. 611.
Etiology of Rheumatic Endocarditis. A. P. Hart, Toronto.—p. 615.
Physician and Benefit Association in Industry. O. A. Cannon, Hamilton, Ont.—p. 619.
Plea for Use of "Combined Treatment" in Affections Other Than Those of Eye. G. H. Burnham, Toronto.—p. 623.
Roentgen-Ray Treatment of Tonsils and Adenoids. J. H. Wesley, Newmarket, Ont.—p. 625.
Primary Sarcoma of Bladder; Case. E. C. Smith, Edmonton.—p. 628.
*Intractable Sciatica; Sacral Epidural Injection; Effective Method of Giving Relief. N. Viner, Montreal.—p. 630.
Case of Anthrax in Man. H. Mackay and R. Moreton, Winnipeg.— p. 634.
Case of Recent and Old Hemorrhages of Brain. R. G. Douglas, Montreal.—p. 638.
Unusual Case of Acute Lead Poisoning. F. W. Luney, London.—p. 639.
Twilight Sleep in Obstetrical Practice with Cases. U. E. Bateson, London, Ont.—p. 639.
Case of Duodenal Ulcer. G. W. A. Aitken, London, Ont.—p. 640.

Hepatic Function Tests.—All hepatic efficiency tests, in Watson's opinion, are still in the experimental stage of their existence, in which light they should be viewed until their comparative values have been more thoroughly worked out and more precise data are at hand correlating the functional with the actual pathology.

Calcium Therapy of Tetany.—While calcium treatment did not in Davidson's case entirely prevent tetany, yet there was a definite diminution in the number of attacks and in the severity, and the beneficial effect was most marked when the dose was given at the most frequent intervals. At first Davidson gave 10 grains twice a day, then three times daily and finally six times daily.

Treatment of Intractable Sciatica.—In cases of so-called intractable sciatica, the sacral epidural injection has, in Viner's experience, had a remarkable effect. This method was evolved separately, early in the century by Cathelin and Sicard, and its original application was to curb enuresis. Some years later the method was revived for its present purpose in France and America. From 50 to 100 c.c. of sterile Ringer's solution, or physiologic sodium chlorid solution, or liquid petrolatum is injected, the quantity varying with the e of the patient, his build, the condition treated, and above on the resistance encountered to the entrance of the fluid. hree, or occasionally four, of these injections are given at intervals of one week. There is usually a certain degree of improvement with each injection. There is practically no contraindication. This method is very effective in giving relief in interactable (and ordinary) sciatica. In most cases it restores the patient to his occupation, and in practically all cases speedily gives marked relief from pain.

Indiana State Medical Association Journal, Ft. Wayne

18: 209-246 (June) 1925

Bilateral Empyema. C. A. Hedblom, Madison, Wis.—p. 208.
Goiter. A. Crotti, Columbus, Ohio.—p. 210.
Bronchial Asthma. C. G. Beall, Fort Wayne.—p. 216.
Suphrenic Abscess. J. K. Berman, Indianapolis.—p. 217.

Iowa State Medical Society Journal, Des Moines

15: 278-336 (June) 1925

Easily Overlooked Manifestations of Circulatory Failure. D. Riesman, Philadelphia.—p. 281.
Hypertension Syndrome in General Practice. J. H. J. Upham, Columbus, Ohio.—p. 286.
*Abnormally Located Goiters. F. H. Lahey, Boston.—p. 293.
*Production of Urinary Calculi by Devitalization and Infection of Teeth in Dogs with Streptococci from Cases of Nephrolithiasis. E. C. Rosenow, Rochester, Minn.—p. 297.
Four Ear, Nose and Throat Cases. S. B. Chase, Fort Dodge.—p. 301.
*Carcinoma of Uterus in Young Women. H. J. Heusinkveld, Jr., Clinton.—p. 307.
Acute Suppurative Mastoiditis Without Previous Middle Ear Symptoms. S. D. Maiden, Council Bluffs.—p. 309.
*Pernicious Anemia: Treatment with Mercurochrome. P. B. McLaughlin, Sioux City.—p. 313.
Intermittent Hydrarthrosis. T. F. Beveridge and L. C. Howe, Muscatine.—p. 315.
Hypothyroidism and Hypo-adrenia. H. Hutton, Chicago.—p. 316.

Abnormally Located Goiters.—Lahey points out that misplaced goiters quite often produce symptoms by interfering with swallowing (lingual, retrotracheal and retroesophageal goiters), by interfering with breathing, encircling retrotracheal and intrathoracic goiter. They require prompt and early surgical treatment. A lesser group, particularly aberrant goiters, produce no symptoms but require differentiation from other lesions. Still another group, retrotracheal, retroesophageal and intrathoracic goiters, require surgical removal as a protection against the production of pressure symptoms and lest their late removal entail measures of such magnitude as to endanger life.

Streptococci Cause Urinary Calculi.—On the basis of experimental results the conclusion is reached by Rosenow that primary urinary calculi are often due to streptococci which have elective affinity for the urinary tract and, it would seem, specific power to incite the conditions necessary for stone formation.

Carcinoma of Uterus in Young Woman.—Heusinkveld cites the case of a young unmarried woman of 20 who had a typical carcinoma of the glandular portion of the cervix. She died five years after operation.

Mercurochrome in Pernicious Anemia.—McLaughlin has used mercurochrome in eight cases. The drug is given intravenously on an empty stomach, in doses of from 3 to 5 mg. per kilogram of body weight. In from two to six hours, the reaction generally begins, which consists of colicky, griping pains in the abdomen, caused by greatly increased peristalsis; purging; vomiting and sometimes involuntary micturition. The vomitus and bowel movements are especially characteristic, as they contain large amounts of bile and mucus. The body temperature rises rapidly to 103 or 104 F. This gradually subsides and after about twelve hours the patient becomes normal, except for a soreness across the abdomen caused by the remaining enteritis, which soon clears up. In about three days, the injection is repeated, but a smaller dose, three quarters as large, is given. This dose is again repeated in three days. The noticeable change in the patient's condition is, first, the return of appetite and then a gradual but general improvement; the temperature remains normal and the jaundice clears up. All McLaughlin claims for the treatment is that he has produced remissions in the course of the disease in eight cases, in which the blood rose to normal or nearly normal. Transfusion of blood failed to do this.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

25: 357-422 (June 18) 1925

*Effect of Administration of Desiccated Red Bone Marrow and Spleen on Resistance of Erythrocytes to Hypotonic Saline Solutions in Dogs. D. C. Leake and E. F. Guy, Madison, Wis.—p. 347.
*Binding Power of Serum for Drugs Tested by New in Vitro Method. R. Beutner, Louisville, Ky.—p. 365.
*Blood Chemistry in Acute Histamin Intoxication. H. Hashimoto, Rochester, Minn.—p. 381.
*Effect of Iodids on Human Nitrogen Metabolism. G. P. Grabfield and A. M. Prentiss, Boston.—p. 411.

Effect of Feeding Spleen and Bone Marrow on Erythrocytes.—Leake and Guy noted that the administration of desiccated spleen and red bone marrow combined in equal proportrons by weight to dogs is followed in from twenty-four to forty-eight hours by an increased osmotic resistance of erythrocytes to hypotonic saline solutions. This either precedes or coincides with the marked rise in the total number of red cells observed after such administration. Evidence is thus offered in support of the hypothesis that an augmented resistance of the erythrocytes, as well as the influx of reticulocytes, may be a factor in contributing to this rise.

Binding Power of Serum for Drugs.—Not only has blood serum binding power for various drugs but there is a variation in the blood of different animals. Some evidence concerning the nature of the constituents of the serum to which the binding is due is obtained by testing the thermolability of the binding power. Cattle serum, the binding power of which was tested by control experiments and found to equal the values observed previously, was heated to 65 C. for one-half hour. After this the binding was again attempted but not a trace of it could be found—it had been destroyed entirely; the serum behaved just like water in the dialysis experiment as described. This experiment points to the prevailing influence of the proteins which are partly coagulated by heating to 65 C. and consequently would be inactivated. It would be hard to understand such an action if the lipoids should cause the binding.

Blood Chemistry in Histamin Intoxication.—In shocklike conditions lasting from three to five hours, induced by repeated intravenous injection of histamin, Hashimoto noted an increase in the nonprotein nitrogen and in the urea nitrogen in the blood. There were evidences indicative of impaired renal function and increased protein destruction in the body. There was no consistent change in the chlorids or carbon dioxid combining power of the plasma. Blood chemistry characteristic of high intestinal obstruction can be partly reproduced by histamin poisoning, but not completely by histamin poisoning of short duration.

Effect of Iodids on Human Nitrogen Metabolism.—The effect of sodium, lithium, calcium, potassium, strontium, and magnesium iodids, compound iodin (Lugol's) solution and sajodin on the nitrogen metabolism of normal human subjects was studied by Grabfield and Prentiss. It was found that the exhibition of any of these drugs increases the urinary nitrogen excretion of subjects in positive nitrogen balance on a constant protein intake. When sodium, lithium, strontium, or magnesium iodids are exhibited the increase in nitrogen output is immediate. When calcium or potassium iodids are given the increase in nitrogen output is delayed; in these experiments it occurred after the three-day period of drug administration. Changes in the nonprotein nitrogen of the blood correspond to urinary changes, i. e., falling if the rise in urinary output is immediate and rising until the increased excretion begins when the latter is delayed.

Laryngoscope, St. Louis

35: 423-500 (June) 1925

Thrombosis of Superior Thyroid Vein from Cervical Abscess Between Larynx and Thyroid. H. Hastings, Los Angeles.—p. 423.
Retrobulbar Neuritis Attributed to Sinus Disease; Improvement Following Intranasal Surgery. G. L. Whelan, Philadelphia.—p. 430.
Focal Infection as Factor in Production of Neurolabyrinthitis; Two Cases. W. G. Shemeley, Jr., Philadelphia.—p. 436.
"Tonsillar" Fistula; Case. J. B. H. Waring, Blanchester, Ohio.—p. 444.
Bronchoscopy and Esophagoscopy in Every Day Practice. A. J. Shekter, Jamaica, N. Y.—p. 446.
Nasal Tampon Treatment of Sinus Diseases. J. I. Dowling, Albany, N. Y.—p. 453.
Throat Stiffness and the Voice. J. A. Glassburg, New York.—p. 469.
New Device for Ear Massage. H. Hays, New York.—p. 473.
Simple Dacryocystorhinostomy for Cure of Dacryocystitis. F. M. Hanger, Staunton, Va.—p. 475.
New Bronchoscopic Powder Insufflator. L. H. Clerf, Philadelphia.—p. 482.
Combined Illuminator and Retractor for Radical Sinus Operations. W. Spielberg, New York.—p. 483.

Medical Journal and Record, New York

121: 657-728 (June 3) 1925

*Chronic Carbon Monoxid Poisoning an Increasing Danger to Municipalities from Automobile Traffic. E. A. Shumway, Philadelphia.—p. 657.
*Hay-Fever Pollens in Upper Air. W. Scheppegrell, New Orleans.—p. 660.
Pollen Sensitiveness. I. S. Kahn and E. M. Grothaus, San Antonio, Texas.—p. 664.
Endocrines in Relation to Rheumatic Fever and Rheumatoid Arthritis. L. J. Llewellyn, London.—p. 670.
*Milk Parenterally in Arthritis. J. Eidelsberg, New York.—p. 674.
After Effects of Tonsil Operations. T. M. Stewart, Cincinnati, Ohio.—p. 676.
Indicanemia. G. Baar, Vienna, Austria.—p. 677.
Periodic Physical Examinations for Physicians. O. H. Leber, New York.—p. 679.
Romance of Medicine. W. D. Haggard, Nashville, Tenn.—p. 681.
Metallic Poisoning from Mercury, Bismuth, Arsenic, Lead, Copper, and Zinc. R. E. Jameson, Davenport, Iowa.—p. 705.
History of Venereal Diseases. S. Gordon, Philadelphia.—p. 707.

Chronic Carbon Monoxid Poisoning.—Shumway suggests to the general practitioner the importance of going into the living conditions of his patients, and making inquiries as to the possibility of chronic poisoning by carbon monoxid coming from automobile engines in those suffering from headache, gastro-intestinal disturbances, anemia, lowered nutrition and neurasthenia.

Hay-Fever Pollens in Upper Air.—Airplane tests reported on by Scheppegrell demonstrated that hay-fever pollens are commonly found in large numbers up to high altitudes during the pollinating season of the plants and trees which produce them. The distance that they traverse in their descent may be 5 or 10 miles. The presence of the pollen clouds, and their change of position, not only by winds but also by ascending and descending air currents, explain many of the phenomena associated with hay-fever, such as the aggravation of the attacks after sunset and during cold changes in the midst of hay-fever season. The extensive potential area of hay-fever pollens, as demonstrated by the airplane tests of the density in the upper air, also shows that the effective control of hay-fever by the enactment of municipal antiweed ordinances is insufficient. While such laws are of undoubted assistance, complete relief can be obtained only by legislative cooperation of the various states of the federal government.

Milk Parenterally in Arthritis.—The reason why removal of foci of infection fails to aid many cases of arthritis is discussed by Eidelsberg. All forms of treatment fail in many cases, it is suggested, because of secondary metabolic and endocrine changes, and extensive pathologic changes. Observations have shown a decided increase in sugar tolerance in arthritis following milk injections. Following milk parenterally there is an increase in metabolic rate in many cases, associated with the improvement.

121: 729-796 (June 17) 1925

Problem Method of Medical Teaching. A. D. Bush, Georgia.—p. 729.
*Does Tissue Fibrinogen Shorten Clotting Time of Blood When Taken Internally? W. M. Billing and A. P. Mathews, Cincinnati.—p. 732.
Back or Dorsal Structures from Internist's Point of View. J. M. Taylor, Philadelphia.—p. 734.
Renal Function Before and After Prostatectomy. N. Blaustein, New York.—p. 738.
Review of Important Problem in Study of Growth and Development of Children. J. H. Hiden, Pungoteague, Va.—p. 743.
Syndrome of Coffee. H. Powers, Brookline, Mass.—p. 745.
Endocrines in Rheumatic Fever and Rheumatoid Arthritis. L. J. Llewellyn, London.—p. 747.
Epilation with Diathermy. A. Rostenberg, New York.—p. 751.
Therapeutic Relationships of Digitalis and Strophanthus. E. E. Cornwall, Brooklyn.—p. 752.
First and Last Kink. W. A. Lane, London.—p. 755.
Acute Postoperative Dilatation of Stomach. F. Reder, St. Louis.—p. 757.
Diaphragmatic Hernia. J. J. Wells, New York.—p. 760.
Chronic Irritable Colon. J. W. Visher, Twin Falls, Idaho.—p. 762.
Treatment of Hourglass Stomach. V. Pauchet, Paris.—p. 767.
Diverticula of Stomach. S. Weiss, New York.—p. 768.
How to Make Snapshot Diagnosis of Hemorrhoids. J. F. Montague, New York.—p. 770.
Comparison Between Third and Fourth Eras of Surgery. R. T. Morris, New York.—p. 771.

Studies on Clotting Time of Blood.—Billing and Mathews found that the subcutaneous injection of physiologic sodium chlorid solution produced no effect on the clotting time of normal human blood. The subcutaneous injection of a small dose, 22 mg., of tissue fibrinogen gave an average lowering of 25 per cent. in the clotting time of the blood of eleven normal persons, one to two hours after the injection. Iced water, taken by mouth, produced no effect on the clotting time of normal human blood. Forty-five mg. of tissue fibrinogen, when administered by mouth in 4 ounces of iced water, to each of nineteen healthy adult persons when the stomach and duodenum were empty produced an average lowering in the clotting time of blood of 48 per cent. These results confirm the observations of Mills.

Minnesota Medicine, St. Paul

8: 349-418 (June) 1925

Twilight Zones of Pathology and Clinical Medicine. E. L. Tuohy, Duluth.—p. 349.
*Obesity; Cases of Endogenous Type. C. A. McKinlay, Minneapolis.—p. 354.
Bladder Diverticula: Two Cases. G. A. Geist, St. Paul.—p. 359.
*Administration of Natural and Artficial Sunlight in Private Practice. J. A. Myers, Minneapolis.—p. 362.
Advantages of Direct Cystoscopy. J. M. Culligan and M. P. Omonundro, Rochester, Minn.—p. 368.
Acute Pancreatitis; Seven Cases. T. H. Sweetser, Minneapolis.—p. 372.
Clinical Interpretation of Glycosuria. C. B. Drake, St. Paul.—p. 377.
*Irregularities of Respiration. E. M. Greisheimer, Minneapolis.—p. 387.
Surgery of Hypertrophic Pyloric Stenosis. A. A. Zierold, Minneapolis.—p. 393.

Endogenous Obesity.—One case of endogenous obesity due to alteration of thyroid function is reported by McKinlay that illustrates a phase of the cyclic variation of thyroid function occasionally observed. Another case of endogenous obesity with lowered basal metabolism is reported in which the patient lost weight after the use of a low calory diet and thyroid extract. In the obese, lack of weight loss after lowered food intake and sufficient exercise suggests a rational basis for the use of thyroid extract. This drug should be used under proper control, which includes estimation of the heat production of the body. In a series of thirty-three cases of obesity, twenty-eight classified as simple and five as pituitary in origin, the basal metabolism was normal in twenty-three cases, more than 10 per cent. increased in nine, and more than 10 per cent. decreased in nine. Signs of endocrine disease were found in four of the nine patients with subnormal basal metabolism.

Value of Heliotherapy.—Myers does not believe that heliotherapy is in itself sufficient in the treatment of any case of tuberculosis. However, when administered with other therapeutic procedures he has found it of tremendous value. It acts as a tonic. It induces the patient to rest quietly while the exposure is being made. In addition to the sun bath, the patient gets an air bath which is of unquestionable value. It is a tangible form of treatment—the patient sees the skin becoming pigmented and feels definitely improved from time to time. Not infrequently by the administration of heliotherapy it is possible to keep a tuberculous patient on dietetic and hygienic treatment for months after all treatment would otherwise be abandoned.

Irregularities of Respiration.—Greisheimer made tracings of the respiratory movements in cases of chronic adhesive pericarditis, asthma, lethargic encephalitis, pneumonia, influenza, pulmonary edema and empyema. Various irregularities of respiration were found. They are pictured and described.

New Orleans Medical and Surgical Journal

77: 505-578 (June) 1925

Postpartum Care. H. E. Miller, New Orleans.—p. 505.
Subacute Bacterial Endocarditis; Case. W. S. Kerlin, Shreveport.—p. 508.
Eye Emergencies. C. A. Bahn, New Orleans.—p. 512.
Pneumothorax Therapy in Pulmonary Tuberculosis. S. C. Lyons, New Orleans.—p. 515.
Treatment (Russell) of Fractures of Femur. E. D. Fenner, New Orleans.—p. 520.
Auricular Fibrillation. C. Jamison, New Orleans.—p. 532.
Cancer Problem in France. G. Jeanneney, Bordeaux, France.—p. 534.
Inguinal Hernia: Surgical Treatment. J. D. Rives, New Orleans.—p. 535.
Lung Abscess. I. Cohn, New Orleans.—p. 539.
Anesthesia in Obstetrics. W. E. Levy, New Orleans.—p. 551.

Ohio State Medical Journal, Columbus

21: 285-472 (June) 1925

Indications for Splenectomy; Five Cases. L. G. Bowers and E. R. Ern, Dayton.—p. 389.
Diagnosis of Chronic Right Iliac Pain; Chronic Appendicitis. V. C. Rowland, Cleveland.—p. 399.
Mental Hygiene in Childhood. S. C. Lindsay, Cleveland.—p. 403.
Fracture of Larynx. S. C. Lind, Cleveland.—p. 406.

Public Health Journal, Toronto

6: 251-300 (June) 1925

Cancer Problem of Canada. F. L. Hoffman.—p. 256.
Clean Milk Supply for Small Towns. A. L. McKay.—p. 267.
Dentistry as Public Health Activity. F. J. Conboy.—p. 273.
New Regulations Governing Medical Inspection of Schools. J. T. Phair.—p. 282.
Sanitary Inspector as Public Health Worker. D. S. McKee.—p. 289.

South Carolina Medical Association Journal, Greenville

21: 137-156 (June) 1925

Cancer as Viewed by Ancients. J. H. Taylor, Columbia.—p. 139.
Grading Tumor Malignancy. F. H. Dieterich, Charleston.—p. 143.
Acute Pancreatitis. I. Abell, Louisville.—p. 144.

Southern Medical Journal, Birmingham

18: 387-490 (June) 1925

*Tissue Changes Following Radium and Roentgen Ray Therapy. H. R. Wahl, Kansas City, Kan.—p. 387.
Larger View of Heart Disease. S. R. Roberts, Atlanta, Ga.—p. 391.
*Treatment of Acute Cyclic Vomiting of Childhood with Glucose Solution and Insulin. D. Greer, Houston, Texas.—p. 395.
Roentgen Ray Analysis of Some Unusual Abdominal Lesions. E. H. Skinner and I. H. Lockwood, Kansas City, Mo.—p. 397.
*Creeping Eruption in Southern States; Entomologic Report. J. L. Kirby-Smith, Jacksonville, Fla.—p. 402.
Angle and Distance Finder for Roentgen Ray Therapy. C. B. Willmott, Louisville, Ky.—p. 411.
*Action of Epinephrin on Pregnant Human Uterus. M. P. Rucker, Richmond, Va.—p. 412.
Prolapse of Uterus; Treatment. Q. U. Newell, St. Louis.—p. 418.
Cyst of Omentum with Twisted Pedicle. C. S. Lawrence, Winston-Salem, N. C.—p. 423.
Visual Field in Toxic Uveitis. H. H. Martin, Savannah, Ga.—p. 426.
Eye Injuries and Determination of Amount of Their Permanent Disability. W. Lapat, Houston, Texas.—p. 429.
Malaria Problem in South. J. A. Ferrell, New York.—p. 432.
Malaria of Dutch East Indies. E. W. Walch, Amsterdam, Holland.—p. 434.
Medical Research in Malaria. R. W. Hegner, Baltimore.—p. 438.
Medical Research in Malaria. S. T. Darling, Leesburgh, Ga.—p. 440.
Entomologic Research in Malaria. W. V. King, Mound, La.—p. 444.
Entomological Research in Malaria. St. T. Darling, Leesburg, Ga.—p. 446.
Malaria Statistics. K. F. Maxcy, Montgomery, Ala. W. G. Smillie, Andalusia, Ala., and W. A. Plecker, Richmond, Va.—p. 449.
Engineering in Malaria. J. A. LePrince, Memphis.—p. 452.
Relative Importance in Transmitting Malaria of Anopheles Quadrimaculatus, Punctipennis, and Crucians and Advisability of Differentiating Between These Species in Applying Control Measures. S. T. Darling, Leesburg, Ga.—p. 456.
Program for County-Wide Malaria Control. S. W. Welch, Montgomery, Ala.—p. 458.
Training Facilities for Malaria Personnel. L. D. Fricks, Memphis.—p. 460.
Methods of Malaria Control to be Advocated Where Anti-Larval Measures are Impracticable. W. S. Rankin, Raleigh, N. C.—p. 462.
Feasibility of Advocating Building Designs or Regulations in Reference to Mosquito Control. J. A. LePrince, Memphis, Tenn.—p. 465.
Malaria Activities. J. A. Ferrell, New York.—p. 466.
Malaria Control Activities in Alabama. S. W. Welch, Montgomery, Ala.—p. 467.
Id. Arkansas. M. Z. Bair, Little Rock, Ark.—p. 469.
Id. Georgia. M. A. Fort, Atlanta, Ga.—p. 469.
Id. Louisiana. O. Dowling, New Orleans.—p. 470.
Id. Mississippi. F. J. Underwood, Jackson, Miss.—p. 471.
Id. Missouri. C. F. Enloe, Jefferson City, Mo.—p. 474.
Id. North Carolina. W. R. Rankin, Raleigh, N. C.—p. 475.
Id. South Carolina. J. A. Hayne, Columbia, S. C.—p. 475.
Id. Tennessee. C. B. Crittenden, Nashville, Tenn.—p. 476.
Id. Texas. M. Duggan, Austin, Texas.—p. 477.
Id. Virginia. L. L. Williams, Jr., Richmond, Va.—p. 478.
Id. California. L. G. Lenert, Sacramento, Calif.—p. 479.
Id Illinois. I. D. Rawlings, Sprinfield, Ill.—p. 480.

When Is Roentgen-Ray Therapy Indicated?—Wahl says that until a more thorough knowledge of the natural history of tumors is associated with roentgen-ray treatment than there has been in the past, one cannot determine just when roentgen-ray therapy is indicated and when it is not.

Treatment of Acute Cyclic Vomiting.—Greer reports two cases of acute cyclic vomiting of rather unusual severity in children to whom glucose solutions and insulin were administered with markedly beneficial results, which he thinks, were probably due to the insulin.

Treatment of Creeping Eruption.—During fourteen years in Florida, Kirby-Smith has seen 2,500 cases of creeping eruption. On general surfaces of the skin, many cures were produced by curettement or incision of furrows, followed by applications of the following chemicals: phenol; tincture of iodin; 2 per cent. mercurochrome; 50 per cent. nitrate of silver solution; 1:500 mercuric chlorid solution. He used 6 per cent. salicylic acid in flexible collodion, but with negative results. Refrigeration with ethyl chlorid and solidified carbon dioxid gave positive results in 20 per cent. of cases treated by these measures, with active lesions located on the arms, legs and trunk. Ethyl acetate is suggested for a thorough trial, as it has proved efficient and nonirritating.

Action of Epinephrin on Pregnant Uterus.—In a series of twenty cases, nineteen of which were at term, and one in the fifth month of pregnancy, the hypodermic administration of 5 minims of epinephrin solution (1-1,000) caused a marked lessening of the force of uterine contractions, as measured by intra-uterine pressure in 80 per cent. of the cases. Four cases showed no appreciable effect. No case showed an increase in the force of uterine contractions. Epinephrin in the dosage used, had no effect on subjective pains. Even where there was complete cessation of all contractions that could be measured by variations in intra-uterine pressure, the patient experienced periodic pains as before. In three other cases, in which he was attempting to do a version under sacral anesthesia, and was hindered by a tightly contracted fundus, a hypodermic administration of 5 minims of epinephrin in two instances produced prompt and definite relaxation of the uterus that made the operation easy.

Surgery, Gynecology and Obstetrics, Chicago

60: 735-954 (June) 1925

*Tuberculosis of Tongue. J. M. T. Finney and J. M. T. Finney, Jr., Baltimore.—p. 743.
Technic of Gastrectomy. T. de Martel, Paris, France.—p. 755.
*Treatment of General Peritonitis. G. E. Armstrong, Montreal, Canada.—p. 760.
Operative Treatment of Ulcers of Body of Stomach. A. J. Walton, London, England.—p. 761.
Relation of Spleen to Certain Chronic Purpuras. W. J. Mayo, Rochester, Minn.—p. 771.
*Problem of Complete Spleen Regeneration. L. Schoenbauer and H. Sternberg, Vienna.—p. 776.
Cysts of Spleen. B. Moynihan, Leeds, England.—p. 778.
Joint Transplantations and Arthroplasty. E. Lexer, Germany.—p. 782.
*Resection of Kidney for Calculous Pyonephrosis. H. M. Richter and L. M. Zimmerman, Chicago.—p. 810.
Ureterocele; Clinical Significance and Process of Formation. D. Petillo, New York.—p. 811.
Hyperthyroidism and Peptic Ulcer; Analogy. G. W. Crile, Cleveland.—p. 818.
Calcium. C. H. Mayo, Rochester, Minn.—p. 822.
*Massive Tumors Due to Diverticulitis of Large Bowel. A. Primrose, Toronto, Canada.—p. 825.
*Periarterial Sympathectomy in Circulatory Diseases of Extremities. B. M. Bernheim, Baltimore.—p. 828.

Subastragaloid Arthrodesis. A. deForest Smith and H. L. von Lackum, New York.—p. 836.
*Pancreatic Lithiasis. S. J. Seeger, Milwaukee, Wis.—p. 841.
*Oral Administration of Sodium Tetraiodophenolphthalein for Cholecystography. L. R. Whitaker, Boston; G. Milliken, Galveston, Texas, and E. C. Vogt, Boston.—p. 847.
*Interdigitation in Repair of Large Ventral Hernias; Lipectomy. W. W. Babcock, Philadelphia.—p. 853.
Acute Infections. T. J. Watkins, Chicago.—p. 857.
*Phalangization of First Metacarpal. G. B. Arana, Buenos Aires.—p. 859.
*Newer Methods of Treatment in Nonunion of Fractures. R. T. Taylor, Baltimore.—p. 862.
Amelioration of Labor Pains by Morphin-Magnesium Sulphate Injections and Colonic Ether Instillations. A. B. Davis, New York.—p. 868.
Supracervical (High Subtotal) Hysterectomy, with Conservation of Menstrual Function. E. Novak, Baltimore.—p. 874.

Tuberculosis of Tongue.—Fifteen cases of tuberculosis of the tongue are reviewed by the Finneys. Three of the fifteen patients were operated on on the assumption that they had carcinoma. In four cases, the tongue lesion was the means of bringing the patient to a doctor, and thus led to the discovery of a most extensive tuberculosis previously unsuspected. In four cases, the disease manifested itself either during or following treatment in a sanatorium for tuberculosis. Direct trauma seems to be the only important causative factor in any of these cases. In no case was the trauma to be charged to that popular bugbear, the pipestem. Pain is not a prominent feature in this list of cases. In only one instance, and that a most fulminating case of only seven weeks' duration, seen immediately following childbirth, was pain of the excruciating character usually described encountered. In two other cases, the pain might be termed severe, while in the remainder it was almost totally lacking. The majority of the patients were in the forties. No special form of treatment is advocated. It would seem wise, however, in a case which seems to be primary, to treat it by wide excision, much as if it were carcinoma.

Treatment of General Peritonitis.—To leave an abdomen full of pus, odorless or foul smelling, Armstrong says, requires the courage of a hero. Coils of intestine that are manhandled, douched and, worse yet, swabbed with gauze, are provoked to adhere, and mechanical obstruction is not a rare sequence. If the coils are not disturbed adhesions will not form and there will be no mechanical obstruction. Then let the technic, Armstrong says, be to to deal with the cause of the infection as gently as possible. A small soft rubber tube or an accordion drain should be passed nearly, but not quite, to the bottom of the pelvis (gauze should not be used), the patient being in the Fowler position, and administer saline solution per rectum or intravenously, if necessary; withhold food until the bowels move. The tube is not for drainage but to allow enough fluid to escape to relieve the intra-abdominal tension and thus facilitate the circulation through the blood and lymph vessels. Armstrong says that all patients with general peritonitis treated in this way will recover if the treatment is instituted before paralytic obstruction has developed.

Spleen Regeneration.—Schoenbauer and Sternberg publish and describe three microscopic sections from transplanted spleen nodules to prove their contention that spleen tissue does not regenerate itself.

Partial Resection of Kidney.—Richter and Zimmermann report a case of partial pyonephrosis due to stone in which one half or two thirds of the kidney was grossly normal and able to maintain a good excretory function. The lower pole of the kidney, however, was so completely destroyed that leaving it behind appeared inadvisable. It was removed by conservative resection without sacrifice of the healthy portion.

Massive Tumor of Intestine.—Primrose reports four cases of massive tumor of the bowel with diverticulitis in which the tumor disappeared spontaneously after the simple expedient of establishing an artificial anus. A permanent cure resulted.

Periarterial Sympathectomy.—Bernheim reports nine cases of periarterial sympathectomy done to relieve pain and promote healing of ulcers in cases of obliterating endarteritis, thrombo-angiitis obliterans and Raynaud's disease.

Pancreatic Stone.—Seeger successfully removed a pancreatic stone from a man, aged 42, who had had stomach trouble which was characterized by belching, pyrosis, nausea and occasional vomiting. He was bothered considerably by burning in the pit of the stomach. He had pain in the epigastrium which, however, was never severe enough to disable him. The preoperative diagnosis was chronic cholecystitis without stone.

Cholecystography.—The oral administration of sodium tetraiodophenolphthalein is being used at Peter Bent Brigham Hospital for cholecystography in the form of pills coated with salol in syrup of Tolu. Cholecystograms have been produced in 93 per cent. of normal subjects by this method. Whitaker, Milliken and Vogt advise the use of the oral method first in cases suspected of gallbladder disease, to be followed by the intravenous method in the few instances in which the result with the former is not conclusive. The advantages of the oral method are that it relieves many patients of the hospitalization necessary for the intravenous method, and that it causes them very little inconvenience and few unpleasant symptoms.

Repair of Ventral Hernia.—Interdigitation is offered by Babcock as an additional method of supporting the defective anterior abdominal wall. It is not a universal method, however, and often it is not applicable.

Phalangization.—The term phalangization is used by Arana for any surgical intervention which has for its object the construction of a stump which will serve as a finger. A case is cited in which this method was employed effectively to restore a lost thumb to a member of the medical profession.

Treatment of Nonunion of Fractures.—The method favored by Taylor to produce union in congenital pseudo-arthrodeses, delayed union or nonunion in bones, is one that furnishes tissues rich in osteophytes and other osteogenetic agencies or forces, such as the osteoperiosteal graft, that obeys biologic and physiologic requirements, plus rigid and prolonged mechanical fixation, as obtained by a bone clamp, that will assure alignment and at the same time not interfere in the least with the blood circulation in bone or periosteum.

U. S. Naval Medical Bulletin, Washington, D. C.

22: 649-743 (June) 1925

Pernicious Anemia. J. B. Pollard.—p. 649.
Biologic Effect of Radiation. G. U. Pillmore.—p. 656.
Mental Tests at Naval Training Station, Newport, R. I. G. L. Wickes.—p. 664.
*Pericarditis with Effusion. J. Buckley.—p. 672.
*Mercurochrome Intravenously Administered in Gonoroccus Infection. L. H. Williams.—p. 677.
Two Mastoid Cases. P. M. Albright.—p. 683.
*Colonic Irrigation and Bacillus Acidophilus Milk in Diarrhea. H. V. Hughens.—p. 691.
*Case of Scarlet Fever of Unusual Etiologic Interest. G. L. Wickes.—p. 696.
*Poisoning by Methyl Salicylate; Case. J. L. Emenhiser.—p. 697.

Pericarditis with Effusion.—Buckley reports three cases of pericarditis with effusion. Each one had a distinct etiology: one, rheumatism; another apparently bronchopneumonia; and the third was probably due to extension of infection from a stab wound. In the matter of diagnosis, the increase of cardiac area, as a rule, was quite well made out, and the associated changes in the lung signs were quite constant; but the often mentioned sign of obliteration of the cardiohepatic angle could not be made out.

Mercurochrome in Gonococcus Infections.—Swift relief from pain of an acutely swollen epididymis and rapid, apparent cure of severe gonococcus infection of the urethra are reported by Williams following the use of mercurochrome administered intravenously in gonococcal infections.

Colon Irrigation and Acidophilus Milk in Diarrhea.—It would appear from Hughen's experience that with the instillation of the live culture of *Bacillus acidophilus* directly into the colon, there is at least an immediate temporary change of flora. The result obtained in a series of cases indicates the superiority of this treatment over the usual treatment.

Vaccination Wound Entrance of Scarlet Fever Infection.—The isolation of *Streptococcus hemolyticus* from the vaccination lesion not only verified the diagnosis of scarlet fever in Wick's case but it established definitely the vaccination lesion as the point of infection. This fact throws a new light on the causes of skin eruptions complicating vaccinations that have often been described as caused by the vaccinia alone.

Poisoning by Methyl Salicylate.—Emenhiser's patient swallowed 1 ounce of methyl salicylate. He complained of shortness of breath, roaring in the ears, dimness of vision, nausea at times, a feeling of heat and profuse perspiration. Treatment consisted of forcing liquids by mouth, 2 per cent. solution of sodium bicarbonate by proctoclysis, and wrapping the patient with blankets to increase elimination by free perspiration. The man recovered.

Virginia Medical Monthly, Richmond

52: 139-206 (June) 1925

*Intravenous Use of Gentian Violet in Treatment of Sepsis. J. S. Horsley, Jr., Richmond.—p. 139.
Glucose and Insulin in Obstetrics. W. Williams, Norfolk.—p. 144.
Treatment of Diabetes by Country Doctor. I. K. Redd, Atlee.—p. 147.
*Intraperitoneal Saline Injections in Infancy. M. Lasersohn, Richmond.—p. 149.
Subdeltoid Bursitis. F. M. Hodges, Richmond.—p. 155.
Pneumoeritoneum in Treatment of Tuberculous Peritonitis. W. N. Mercer, Alexandria, La.—p. 156.
Diseases of Thyroid. J. W. Lindsay, E. C. Rice and M. A. Selinger, Washington, D. C.—p. 158.
*Hernia of Liver Into Umbilical Cord; Case. G. H. Reese, Petersburg.—p. 164.
Cholecystostomy Versus Cholecystectomy. B. M. Baker, Norfolk.—p. 166.
Determination of Activity in Pulmonary Tuberculosis. D. B. Cole, Richmond.—p. 169.
Vaccinia of Eyelids in an Unvaccinated Boy. C. A. Young, Roanoke.—p. 171.
Treatment of Fibroids of Uterus. C. R. Robins, Richmond.—p. 172.
*Symptom Public Should Know in Typical Acute Appendicitis. J. E. Rawls, Suffolk.—p. 175.
Kahn Test as Aid in Diagnosis of Syphilis. K. T. Redfield, Roanoke. p. 177.
Abscess of Supernumerary Mammary Gland; Case. W. A. McGee, Richmond.—p. 179.
Psychoses in Twins. A. Gordon, Philadelphia.—p. 181.

Intravenous Use of Gentian Violet in Sepsis.—Animal experiments and the results from treatment of twenty-five cases of severe sepsis with gentian violet have convinced Horsley of the value of this treatment. In doses varying from 3 to 7 mg. per kilogram of body weight, properly prepared 0.25 to 1 per cent. solutions of gentian violet may be given intravenously with safety. In sepsis when gram-positive staphylococci are the sole or predominant etiologic organisms and when the bacteria are accessible to the blood stream, the intravenous use of gentian violet is justifiable, indicated and most beneficial.

Intraperitoneal Saline Injections in Infancy.—Lasersohn urges the more widespread use of injections of saline solution into the abdominal cavity of dehydrated babies.

Hernia of Liver into Umbilical Cord.—The hernia in the case reported by Reese was noted during delivery. It consisted of a livid mass about 3 inches in diameter, projecting into the much thinned cord which led from the summit of the mass. The hernia projected through the abdominal wall about 2 inches. The sac was first opened. A short survey revealed the entire mass to be the liver, dome forward, unattached to anything except the cord and to this only by a cobweb-like filament of tissue arising from the crest of the liver.

Pain in Appendicitis.—Rawls would have the public know that in from 60 per cent. to 70 per cent. of acute appendiceal conditions there is a very definite and characteristic pain. This aching or pain begins in the epigastric or umbilical region and gradually spreads over the entire abdomen in the course of two or three hours. Then, in from six to twelve hours from the onset, the pain settles or localizes in some definite portion of the abdomen, usually in the lower right quadrant, in the McBurney region. By learning this one symptom, each individual would not only save himself but also his friends, and thus would save at least 10,000 people annually.

West Virginia Medical Journal, Huntington

20:281-336 (June) 1925

Treatment of Cerebral Trauma. T. Fay, Philadelphia.—p. 281.
Use of Magnesium Sulphate in Obstetrics. H. S. Keister, Fairmont.—p. 288.
Cesarean Sections; Cases. E. F. Sheppard, Fairmont.—p. 290.
Regular or Pseudomedicine. R. Kessel, Charleston.—p. 295.
Fifty Consecutive Cases of Bronchial Asthma. K. D. Graves, Roanoke.—p. 297.
Present Understanding of Rickets. G. M. Lyon, Huntington.—p. 300.
Postoperative Hematemesis with no Demonstrable Lesion to Explain Its Occurrence. C. F. Fisher, Richwood.—p. 305.
Diagnostic Problems of Biliary Diseases. R. O. Rogers, Bluefield.—p. 308.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

6: 91-138 (June) 1925

*Tetanus. II. Agglutination and Toxicity of B. Tetani. P. Fildes.—p. 91.
Antigenic Properties of Lysozyme Dissolved Vaccines. V. D. Allison.—p. 99.
*Nonspecific Stimulation of Antibodies: Effect of Maganese on Agglutinins. E. S. Horgan.—p. 108.
*Antigenic Properties of Precipitates Produced by Interaction of Diphtheria Toxin and Antitoxin. P. Hartley.—p. 112.
*Virus of Lethargic Encephalitis. J. R. Perdrau.—p. 123.
*Etiology of Milk Fever in Cattle. W. L. Little and N. C. Wright.—p. 129.
*Edema: I. Electrolyte Concentration in Body Fluids in Nephritis with Edema. J. Marrack.—p. 135.

Toxicity of Tetanus Bacillus.—All of seventy-five recently isolated strains, corresponding in morphology and cultural reactions with *B. tetani,* agglutinated with serums made from five type strains. No example identical with Tulloch's Type IV was met with. Agglutination with a polyvalent serum made from the five type strains is a satisfactory criterion of a tetanus bacillus. Forty-five of the new strains were toxic to guinea-pigs or mice; thirty had no demonstrable toxic effect on these animals. Spontaneous loss of toxicity may occur. Fildes says it is unsafe to assume that strains nontoxic to animals are nontoxic to man.

Effect of Manganese on Agglutinins.—The suggestion is made by Horgan that there is some connection between the potentiality of the animal to produce antibodies and the power of response to the nonspecific stimulation of manganese.

Antigenic Properties of Toxin and Antitoxin Precipitates.—The precipitates produced by Hartley from mixtures of diphtheria toxin and antitoxin are insoluble in physiologic sodium chlorid solution, and when they have been repeatedly washed with this fluid contain less than 1 per cent. of the nitrogen compounds of the original mixture. Such washed precipitates are antigenic. Guinea-pigs injected with amounts of precipitate emulsion containing less than 0.01 mg. of nitrogen (and less than 0.001 mg. organic nitrogen) became immune to diphtheria toxin. They developed antitoxin in their blood and survived the injection of three fatal doses of diphtheria toxin. The antigenic value of the precipitate varies with the nature of the original toxin-antitoxin mixture. If antitoxin is in very large excess the antigenic value of the resulting precipitate is low. The most active preparation was obtained from a mixture which was slightly toxic for guinea-pigs.

Virus of Epidemic Encephalitis.—A technic is described by Perdrau by which the presence of a virus indistinguishable from that of herpes was demonstrated in the brains of all three of the cases in which this technic has been used. This technic is based on the presence of an activating substance, possibly of the nature of an aggressin, in the brain of animals under certain conditions of experiment. A virus capable of giving rise to a keratitis in the rabbit, and apparently identical with that of herpes, was demonstrated in the nasal washings of six out of seven cases of the disease.

Etiology of Milk Fever.—Determinations made by Little and Wright of the calcium content of the blood plasma of cows suffering from milk fever show that considerable diminutions (in mild cases 20 to 30 per cent., in severe cases up to 60 per cent.) accompany the onset of this disease. They have been unable to demonstrate any significant increase in the "total acetone bodies" of the blood or urine in these cases.

Electrolytes in Nephritis with Edema.—Marrack says that the concentration of electrolytes in the body fluids in nephritis with edema is low, and may be definitely below the normal range. The bearing of this fact on theories of the cause of edema is discussed.

British Medical Journal, London

1: 1115-1158 (June 20) 1925

Painless Pelvic Surgery. F. J. McCann.—p. 1115.
Efficiency of Sterilization of Dressings. R. J. B. Hall and A. W. Chapman.—p. 1119.
*Lethargic Encephalitis; Sixty-Two Cases. A. G. Gullan.—p. 1120.
Three Simultaneous Empyemata Following Pneumonia. L. G. J. Mackey.—p. 1124.
Insulin Treatment of Diabetes in Phthisis. Z. P. Fernandez.—p. 1125.
Treatment of Effusions in Artificial Pneumothorax. B. Hudson.—p. 1125.
Complications of Lumbar Puncture. J. L. Halliday.—p. 1126.
Acute Calculus Cholecystitis in Girl of Fifteen. G. H. Edington.—p. 1127.
Hereditary Jaundice. W. M. Taylor.—p. 1127.

Treatment of Epidemic Encephalitis.—Gullan presents a clinical study of sixty-two cases of lethargic encephalitis. The treatment he has found most effective is sodium salicylate, 15 to 30 grains, every three or four hours. In those cases in which there are symptoms of insomnia and restlessness he usually adds from 5 to 10 grains of bromid and iodid of potassium.

Journal of Biochemistry, Tokyo

4: 385-505 (Jan.) 1925

*Influence of Duodenal Alkalization on Gastric Secretion. T. Matsuyama.—p. 385.
Glycolytic Power of Blood. III. Y. Kawashima.—p. 411.
*Glycolytic Power of Blood. IV. Y. Kawashima.—p. 429.
Action of Malonic Acid and Dicarbon Acids in Animal Body When Added to Liver Blood. G. Momose.—p. 441.
*Chemical Studies on Hematoporphyrin Rabbits. II. Relationship Between Anemia and Fibrinogen Content of Blood. K. Ohta.—p. 463.
Id. III. Fibrinogen Contents of Blood of Hematoporphyrin Rabbits. K. Ohta.—p. 467.
*Revised Titrimetric Method of Estimating Carbon Dioxid in Small Amount. S. Nishi.—p. 473.
*Rat Carcinoma. M. Iwano.—p. 481.

Influence of Duodenal Alkalization on Gastric Secretion.—Matsuyama's researches show that introduction of alkali into the duodenum lowers gastric acidity, the degree of reduction being dependent on the dose and the time of administration.

Glycolytic Power of Blood.—Kawashima's experiments confirm his previous observations that the glycolytic power of erythrocytes is dependent on their activity in general. Insulin does not reactivate old blood cells.

Relationship Between Anemia and Fibrinogen.—Ohta asserts that anemia and the increase in fibrinogen in the blood of hematoporphyrin rabbits exposed to sunlight ought to be interpreted as concurrent phenomena.

Estimation of Carbon Dioxid.—The principle of the method of estimating a small amount of carbon dioxid reported by Nishi is to absorb carbon dioxid in a sodium hydroxid solution of known concentration, and to titrate the rest of the alkali with a standard acid solution in the presence of bicarbonate formed in the solution, thymolphthalein being used as indicator.

Rat Carcinoma: Relation of Feeding and Age.—The relation of feeding and the age of tumors and rats on the takes and the growth of the transplanted tumors in the rats were studied by Iwano, leading to the conclusion that the takes of tumors in old rats (7-10 months old) were unaffected by hunger, and that the growth of the tumors generally was somewhat retarded for a short period by underfeeding.

Journal of Tropical Medicine and Hygiene, London

28: 217-236 (June 15) 1925

*Three New Yeastlike Organisms and a New Bacillus Isolated from Furunculosis Blastomycetica; Macroglossia Blastomycetica, Stomatitis Cryptococco-Bacillaris. A. Castellani.—p. 217.
*Cysts of Tricercomonas Intestinalis Wenyon and O'Connor 1917 Found in Human Feces. J. G. Thomson and Andrew Robertson.—p. 223.
*Treatment of Blackwater Fever. C. L. Trout.—p. 225.
*Presence of Spirochetes in Sputum of Tuberculous Patients. F. Bezancon and E. Etchegoin.—p. 228.
Beneficial Action of Raw Pancreas in Certain Cases of Sprue. Insulin in Cases of Sprue Complicated with Diabetes. A. Castellani.—p. 230.
Fly-Proof Latrines for Colored Persons. G. A. P. Ross.—p. 231.

New Yeastlike Organisms.—Castellani describes a yeastlike organism recovered from cases of furunculosis blastomycetica (furunculosis cryptococcica, pseudo-furunculosis blastomycetica, furunculosis monilliaca, folliculitis decalvans cryptococcica); another organism was recovered from a case of macroglossia blastomycetica (*Cryptococcus macroglossia*, *Monilia macroglossia*), and a third fungus, together with a bacillus living in symbiosis, was isolated from cases of peculiar mycotic stomatitis. These are named, respectively, *Cryptococcus graciloides* and *Bacillus vermiculoides*.

Tricercomonas in Human Feces.—The cysts of *Tricercomonas intestinalis* were found by Thomson and Robertson in large numbers in the stools of a man convalescent from sprue. The patient had returned fairly recently from India, where he had been stationed in the neighborhood of Madras. *Tricercomonas intestinalis* Wenyon and O'Connor, 1917, has been reported, including the present case, on seventy-six occasions.

Treatment of Blackwater Fever.—Trout describes a method of treatment that he has used with good result in cases of blackwater fever. It consists in good nursing, proper attention to kidneys, bowels, heart, etc.; use of salt solution; hypodermoclysis and the administration of antivenom or horse serum, one ampoule, repeated in case of relapse. In asthmatics, crotalin, 1/100 gm., is given, if there is sensitivity to horse serum. Plenty of fluids are given by mouth and 0.25 gm. caffein sodium benzoate is injected subcutaneously. Orally, Trout gives cantharides tincture, 5 drops, in 2 ounces of water, to which 1 dram of sodium bicarbonate is added. Two teaspoonfuls are given every half hour until the urine is normal.

Spirochetes in Tuberculous Sputum.—The presence of spirochetes in the hemoptoic sputum of tuberculous patients has, up to the present day, never been recorded by any bacteriologist. In the course of researches on spirochetes in general, Bezancon and Etchegoin observed in the hemoptoic sputum of a tuberculous patient, some spirochetes in the very moment of the hemoptysis, although these did not exist on the previous days. They have examined 239 sputums. In sputum of tuberculous individuals, one can never find the type of spirochete which is observed in the sputum of the same patients during an attack of hemoptysis. This type of spirochete has nothing in common with other spirochetes of the respiratory tracts. In nonhemoptoic sputum, with or without bacilli of Koch, Bezancon and Etchegoin have never found the spirochete in question, nor any other kind of spirochetes. They have found it in the hemorrhagic sputum of bronchial dilatation. Out of twenty-seven hemoptoic sputums of tuberculous origin, spirochetes were found in twenty-six cases.

Lancet, London

1: 1331-1382 (June 27) 1925

*Tubercle Complement Fixation Reaction with Besredka Antigen in Investigation of Pulmonary Disease. W. Broughton-Alcock, M. Douglas and H. C. Lucey.—p. 1331.
*Incendiarism in Adult Males. H. T. P. Young.—p. 1334.
Pyridine-β-Carbonic Acid Diethylamide as an Analeptic. E. S. Faust.—p. 1336.
"Smalarina" in Malaria. G. C. Low and A. L. Gregg.—p. 1339.
Case of Functional Epileptiform Seizure with Babinski Reflex. C. Shearer.—p. 1341.
Bronchomediastinal Fistula in Pott's Disease. C. Cameron.—p. 1341.
Congenital Cyst of Common Bile Duct. W. G. Wyllie.—p. 1342.

Tubercle Complement Fixation Reaction.—Broughton-Alcock, Douglas and Lucey report the laboratory findings of the tubercle complement-fixation reaction, employing Besredka's antigen, and their relationship to the findings of *Bacillus tuberculosis*, noted in the examination of 6,000 subjects that showed various disabilities of a pulmonary nature, due to chest wounds, gassing, pandemic influenza of 1918, chronic bronchitis, etc. The percentage of positive findings when *B. tuberculosis* is found in the sputum is 84.5 per cent., that of doubtful reactions 6.1 per cent., and of negative reactions 9.4 per cent.

Incendiarism in Adult Males.—Young states that a morbid impulse to burn is not limited to any particular group of psychoses or to mental deficiency, and, for this reason, it seems probable that the impulse is of accidental origin. The presence of an alleged irresistible impulse to commit an incendiary act, unless accompanied by definite signs of mental disease or defect, cannot be held to relieve an accused person of his responsibility. The condition, moreover, is not recognized in English criminal courts.

Archives des Maladies de l'App. Digestif, Paris

15: 305-408 (April) 1925

*Synthetic Origin of Uric Acid, and Uricolysis in Man. M. P. Weil.—p. 305.
Duodenojejunostomy in Chronic Stenosis. A. Weiss.—p. 318.

Synthetic Origin of Uric Acid, and Uricolysis in Man.—Weil's experiments on dogs revealed a double cause for the rapid reduction of uricemia, namely, destruction of uric acid in the blood and fixation of uric acid by the kidneys, which then progressively pass it into the blood. The blood stream is the only place of destruction of uric acid in the living organism. Uricolysis, evident in the blood, does not appear in vitro. He considers it improbable that uric acid in man is the only end-product of the metabolism of purins. Schittenhelm believes that uric acid in human urine represents only the difference between the produced and the destroyed uric acid. An impairment of the normal processes of uricolysis is probably, in certain circumstances, an important factor in the mechanism of hyperuricemia.

Bulletin Médical, Paris

39: 553-580 (May 16) 1925

The Two Types of Bradycardia. M. A. Foucart.—p. 559.
*Fat from the Horse. Veyrières.—p. 563.
Acute Ileocecal Invagination. T. Asteriades.—p. 566.

Research on Horse Fat.—Veyrières found that in horses, unlike cattle, practically all the fat that can be extracted lies in the omentum region. Part of it is very soft. From his experiments he concludes that it is a suitable substitute for vegetable oils in pharmaceutic preparations; it is less expensive and it penetrates the skin far better. Combining it with other fats in proportions to be determined, excipients of desired consistency may be made. Equal parts of fat from the horse and the calf are suggested as a substitute for butter, offering greater nutritive value than substitutes from vegetable fats. He believes that for all purposes horse fat might replace vegetable oils. Experiments show that it saponifies easily.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 721-771 (May 15) 1925

Nonspecific Immunization in Infections. M. Renaud.—p. 722.
Dosage of Serum from Measles Convalescents. M. Pinard.—p. 723.
Pathogenesis of Myasthenia. A. Sézary.—p. 724.
*Effect of Sugar in the Stomach. M. Loeper and G. Marchal.—p. 726.
*Use of Borax in Hyperthyroidism. M. Loeper and J. Ollivier.—p. 734.
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*Reactivity with Anatoxin Vaccination. C. Zoeller.—p. 744.
*Skin Myiasis. L. Ribadeau-Dumas and Larrousse.—p. 750.
Esophagus Spasm from Tuberculous Glands. L. Ribadeau-Dumas and J. Debray.—p. 756.
Ratio of Nitrogen Products and Liver Functioning. Fiessinger et al. —p. 760.

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49: 773-788 (May 22) 1925

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Comptes Rendus de la Société de Biologie, Paris

92:1261-1340 (May 15) 1925. Partial Index

*Inoculation of Cancer Filtrate in Mice. Romme and Harde.—p. 1263.
*The Weichbrodt and Benzoin Reactions. Périsson et al.—p. 1265.
Rôle of Water in Development. J. Arager.—p. 1267.
*Bacillus in Abscess of Triton. Lavier and Hauduroy.—p. 1272.
*Action of Fluorin on Animals. Cristiani and Gautier.—p. 1276.
*Homografts of Parathyroid. H. and A. Cristiani.—p. 1278.
*Action of Oils on Mosquitoes. H. Charrier.—p. 1280.
*Autonomy of the Bacteriophage. Wellman and Brutsaert.—p. 1284.
*Trypanosoma Infection in Caterpillars. E. Iwanow.—p. 1286.
*Anatoxin Reaction. C. Zoeller and Manoussakis.—p. 1290.
*Conservation of Rabies Virus. E. Plantureux.—p. 1292.
*Regeneration of Ovary. V. Pettinari.—p. 1294.
*Insulin in Anthrax Infection. G. Cordier.—p. 1307.
Elaboration Function of Mitochondria. R. Noël.—p. 1312.
Glucose in Erythrocytes and Plasma. Fock and Holboell.—p. 1315.
*Phenolsulphonephthalein Test. Moeller and Lundsgaard.—p. 1321.
Blood Calcium in Epileptics. P. J. Reiter.—p. 1325.
Effect of Strychnin on Nervous System. Bremer and Rylant.—p. 1329.
Pneumogastric Apnea. J. F. and C. Heymans.—p. 1335.

Inoculation of Cancer Filtrate in Precancer Stage.—The injection did not develop the tumor in mice during the precancer stage of tar application. Romme and Harde consider the fact as an argument against the cancer virus theory.

Weichbrodt and Colloid Benzoin Tests in Differential Diagnosis of Tumor and Abscess in Brain.—Périsson, Pollet and Bréant ascertained that with the Weichbrodt and the colloid benzoin tests the dosage of fibrinogen is needless in establishing the mechanical or inflammatory origin of hyperalbuminosis in the cerebrospinal fluid. A strongly positive Weichbrodt reaction reveals an inflammatory process, causing increase in fibrinogen, while a negative reaction shows a mechanical cause. A slightly positive Weichbrodt reaction may appear with a mechanical hyperalbuminosis, if the amount of the total albumin is very high. The reaction is negative with the inflammatory process of tuberculous meningitis, because here the fibrinogen is precipitated as fibrin. This is due to minimal hemorrhages. A positive benzoin reaction in the first five tubes also seems to indicate the inflammatory character of hyperalbuminosis, but the paralysis curve is not due to fibrinogen. The reaction indicates an inflammation and may be positive not only in syphilitic lesions with spinal hyperleukocytosis, but also in diphtheria paralysis and in "acute polyradiculitis." The benzoin reaction is positive in mild and in deeply situated inflammations, as multiple sclerosis, in which the Weichbrodt reaction is negative.

Bacillus found in Subcutaneous Abscess of a Lizard.—Lavier and Hauduroy describe the bacillus which, they say, seems to be a variety of colon bacillus. It is pathogenic and causes slowly developing abscesses.

Action of Fluorids on Animals.—Cristiani and Gautier recall their research on the endemic disease of cattle caused by fluorin from aluminum factories. Guinea-pigs, given sodium fluosilicate, developed a syndrome of "fluorinosis" followed by cachexia and death of the animals. The same occurred with sodium and ammonium fluorid.

Persistent Success with Parathyroid Homografts.—H. and A. Cristiani obtained excellent results with parathyroid homografts. Eighteen months after the operation the implanted organ showed an apparently perfect normal vitality. No difference was noted in the development of autografts and homografts of the gland. The grafts were in rats' ears.

Action of Oils and Paraffin on Mosquito Larvae.—Charrier's experiments showed that death from these substances was due only partially to obstruction of the respiratory tract; the toxic effect was the main factor, since volatile oils may cause death in a few minutes.

Antigen Autonomy of the Bacteriophage.—Wollman and Brutsaert affirm that neither different antibacterial serums, nor serums prepared with lysates from tyrothrix action, exerted an inhibiting action on the bacteriophage. A definite inhibiting action occurred with 0.002 c.c. of antibacteriophage serum in three drops of bacteriophage. They conclude that the bacteriophage represents a new antigen entity.

Phagocytosis in Trypanosoma Infection.—Examination of the blood in different phases of *Trypanosoma equiperdum* infection in caterpillars, showed that phagocytosis is the most active factor in the defense of the organism, and temperatures of 37 or 38 C. are most favorable for it.

Connection of Anatoxin Reaction with Diphtheroid Bacilli.—Zoeller and Manoussakis reiterate that the reactions to intradermal injections of pseudodiphtheria bacilli emulsion or filtrate are analogous to the reaction to anatoxin. In twenty-seven subjects a negative intradermal reaction always coincided with a negative anatoxin reaction. A positive or a negative intradermal reaction may coincide with a positive anatoxin reaction. Evidently the pseudodiphtheria bacilli cannot sensitize against protein or reactivate the hypersusceptibility. Investigation on 158 subjects proved that diphtheroid bacilli, present in the throat, may under the influence of a simple sore throat or with measles increase or even induce protein sensitization. It is possible that this phenomenon may be superposed on the toxic phenomena and be partly responsible for the manifestations of specific infection.

Conservation of Rabies Virus.—Plantureux suggests to use glycerin solution treated with formaldehyd, instead of glycerin alone, for conservation of spinal cords containing rabies virus.

Regeneration of Ovaries from Ovarian Grafts.—Pettinari made bilateral implantation of ovarian grafts in a female dog, 16 years old. She cast a litter fifteen months after the operation. Removal of the ovaries a month afterward resulted in the death of the animal. No grafts were found at the necropsy; the ovaries presented a normal aspect, while at the time of the grafting they were in a stage of sclerosis and cystic degeneration. Histologic examination showed regeneration in a previously senile organ.

Action of Insulin and Glucose on Anthrax Infection.—Cordier noted that neither insulin nor a solution of glucose accelerated or retarded the development of anthrax in guinea-pigs.

Fate of Phenolsulphonephthalein in Organism.—Analysis of the stools of twenty-six patients, given intravenous injection of 6 mg. of phenolsulphonephthalein, showed absence of the substance in seventeen cases; in the other nine from 1 to 8 per cent. of the amount injected was recovered. Evidently phenolsulphonephthalein may be eliminated, resorbed and transformed in the digestive tract. The duodenal tube (Meltzer-Lyon technic) immediately after intravenous injection of phenolsulphonephthalein showed the presence of from 1 to 3 per cent. of the substance *in the bile* of three normal persons, while it was absent in the bile of five persons with liver disease. These facts should be considered in phenolsulphonephthalein tests.

Paris Médical

55:441-464 (May 16) 1925

*Postoperative Pneumoperitoneum. P. Carnot.—p. 441.
Surgical Treatment in Amebic Abscess of Liver. F. Papin.—p. 445.
Cholecystography (Graham and Cole). R. Ledoux-Lebard.—p. 450.
Insulin in Diabetes with Cirrhosis. Chabrol and Hébert.—p. 453.
Lambliasis of the Gallbladder. P. Carnot et al.—p. 457.

Postoperative Pneumoperitoneum in Treatment of Perivisceritis.—Carnot had good results in a series of ten experiments on dogs. The simple technic consists in making a postoperative pneumoperitoneum to separate the perivisceral surfaces, deprived of their peritoneum, during the short time necessary for their spontaneous aseptic reendothelialization. He suggests that pneumoperitoneum be tried in man.

55:481-496 (May 30) 1925

*Spontaneous Immunization. P. Lereboullet and P. Joannon.—p. 481.
Cancer Stations in France. C. Regaud.—p. 489.
Digitalin by the Vein in Weak Heart Action. Schédrovitzky.—p. 492.

Mechanism of Occult Spontaneous Immunization.—Lereboullet and Joannon explain the mechanism by assumption of an imaginary threshold. Contaminations, below the threshold, do not cause the disease, but raise the threshold, making the development of the disease in the future still less probable. The disease appears with contagion above the individual threshold. The threshold is evidently low for certain diseases and at certain ages, and may be abnormally low in certain subjects. Cold, overwork and an intercurrent affection lower the threshold. Diseases may become gradually

Archives des Maladies de l'App. Digestif, Paris

15: 305-408 (April) 1925

*Synthetic Origin of Uric Acid, and Uricolysis in Man. M. P. Weil.—p. 305.
Duodenojejunostomy in Chronic Stenosis. A. Weiss.—p. 318.

Synthetic Origin of Uric Acid, and Uricolysis in Man.—Weil's experiments on dogs revealed a double cause for the rapid reduction of uricemia, namely, destruction of uric acid in the blood and fixation of uric acid by the kidneys, which then progressively pass it into the blood. The blood stream is the only place of destruction of uric acid in the living organism. Uricolysis, evident in the blood, does not appear in vitro. He considers it improbable that uric acid in man is the only end-product of the metabolism of purins. Schittenhelm believes that uric acid in human urine represents only the difference between the produced and the destroyed uric acid. An impairment of the normal processes of uricolysis is probably, in certain circumstances, an important factor in the mechanism of hyperuricemia.

Bulletin Médical, Paris

39: 553-580 (May 16) 1925

The Two Types of Bradycardia. M. A. Foucart.—p. 559.
*Fat from the Horse. Veyrières.—p. 563.
Acute Ileocecal Invagination. T. Asteriades.—p. 566.

Research on Horse Fat.—Veyrières found that in horses, unlike cattle, practically all the fat that can be extracted lies in the omentum region. Part of it is very soft. From his experiments he concludes that it is a suitable substitute for vegetable oils in pharmaceutic preparations; it is less expensive and it penetrates the skin far better. Combining it with other fats in proportions to be determined, excipients of desired consistency may be made. Equal parts of fat from the horse and the calf are suggested as a substitute for butter, offering greater nutritive value than substitutes from vegetable fats. He believes that for all purposes horse fat might replace vegetable oils. Experiments show that it saponifies easily.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 721-771 (May 15) 1925

Nonspecific Immunization in Infections. M. Renaud.—p. 722.
Dosage of Serum from Measles Convalescents. M. Pinard.—p. 723.
Pathogenesis of Myasthenia. A. Sézary.—p. 724.
*Effect of Sugar in the Stomach. M. Loeper and G. Marchal.—p. 726.
*Use of Borax in Hyperthyroidism. M. Loeper and J. Ollivier.—p. 734.
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Clinica Medica Italiana, Milan

56: 1-96 (Feb.) 1925

Herpes Zoster a Root and Ganglion Affection. P. Sangiorgi.—p. 1.
*Fat Destruction by Endocrine Glands. P. A. Tedesco.—p. 28.
*Diathermy and Sedimentation Test. E. Puxeddu.—p. 42.
Advantages of Phenol-Treated Rabies Vaccine. V. Puntoni.—p. 58.
Comparative Study of Serologic Tests. G. Vercellotti.—p. 62.
*Action of Acetone on the Liver and Kidney. B. Poliak.—p. 85.
Action of Spleen on the Pancreas. P. Berri.—p. 90.

Lipodieresis by Endocrine Glands.—Tedesco's research on beef endocrine glands has confirmed that the fat destroying power is most marked in the sympathicotonic organs.

Diathermy and Sedimentation Test.—A delay of from forty to ninety minutes was constantly observed in Puxeddu's sixty patients treated with diathermy.

Action of Acetone on the Liver and Kidneys.—Poliak's five dogs given acetone by the stomach tube all developed a degenerative hepatitis. When the liver was so incompetent that the acetone was not taken up by this organ, and some of it reached the kidneys, these organs also suffered, especially the convoluted tubules; otherwise not.

Archivos Latino-Amer. de Pediatría, Montevideo

19: 605-711 (Feb.) 1925

*The Thymus. J. Schwarzenberg Lobeck.—p. 605.
*Chronic Rheumatism from Congenital Syphilis. Acuña and Bazán. —p. 619.
*Meningeal Hemorrhage in the New-Born. Velasco and Paperini. —p. 682.

The Thymus.—This study of the thymus concludes with the remark that notwithstanding the intensive study of this organ in the last few years, our knowledge as to its physiologic rôle is still meager and vague. The only slight progress that has been realized is in the line of histology.

Chronic Rheumatism in Children with Congenital Syphilis.—Acuña and Bazân were never able to cure the children in their cases under any treatment; the general condition improved remarkably and the joint lesions were arrested, but they never retrogressed. In some cases rapid improvement was realized with sodium salicylate but mercury was required to make the benefit permanent. An important aid in the differential diagnosis is the absence of any symptoms on the part of the heart. Only one child presented a briefly transient pericardial friction sound. None of the ten children had chronic tonsillitis or sinusitis or gonococcus infection. A phase of acute febrile articular rheumatism was known in only a few of the ten cases. The clinical picture was that of ordinary chronic rheumatism except for the repeatedly positive Wassermann reaction, and the appreciable benefit from specific treatment. It is essential to start it early to ward off irreparable lesions. They advise intensive combined treatment, possibly supplemented with organotherapy.

Meningeal Hemorrhage in the New-Born.—Velasco and Paperini analyze their thirteen cases in which the child survived for more than twenty-four hours. Six of the infants recovered completely, with no apparent sequelae to date. In nineteen the hemorrhage proved promptly fatal. A yellowish [illegible]t of the lumbar puncture fluid or a uniform hemorrhagic [illegible]ect suggested the diagnosis, confirmed by the abnormal [illegible]hrocytes in the centrifuge sediment or crystals of hematin. [illegible] warn that even when surgical intervention is feasible, it [illegible]l not be attempted before the fourth day, allowing time [illegible]endency to spontaneous recovery to become apparent, or [illegible]l outcome. If conditions look promising the fourth [illegible] operation should be considered with hemorrhage [illegible] the dura and the arachnoid or above the tentorium. [illegible]est, however, the mortality is still 50 per cent. In [illegible]es that came to necropsy, the hemorrhage was from [illegible]m, and this seems beyond the reach of surgery, [illegible] measures may accomplish much, reducing the [illegible]on and promoting coagulation. Lumbar [illegible] the former, and they never witnessed any harm from repeating it two or more times a day until improvement was evident. They found intraspinal injection of 10 to 30 c.c. of normal horse serum the most effectual measure for hemostasis, repeated daily, supplemented by intramuscular or subcutaneous injections of the serum, and possibly by subcutaneous injection of 10 or 20 c.c. of 10 per cent. solution of gelatin (14 per cent. cured in forty-two cases). They insist that every new-born infant suffering from birth trauma or with a history of antecedents suggesting infectious or toxic injury likely to render the blood vessels more fragile, should have lumbar puncture done at once after birth. This will reveal meningeal hemorrhage and be the first step in treatment. The diagnosis is aided by the obstetrical history, and tendency to asphyxia, dysphagia, taut fontanels, convulsions, stupor or comatose state, opisthotonus, rigidity, jaundice, etc.

Clinica, Montevideo

2: 19-39 (Feb.) 1925

*Mediastinal Tumors. L. Morquio and A. Volpe.—p. 19.
Mercury Test for Ether. J. C. Chiarino.—p. 32.
*Nipiology. R. Eyzaguirre.—p. 36.

Mediastinal Tumors.—The fatal tumor had originated in the thymus or in the tracheobronchial glands in the two children.

Nipiology.—Eyzaguirre pleads for the foundation of an institute exclusively for welfare work for infants too young to talk. The infant mortality of 25 per cent. in the first year of life shows the necessity for work in this line.

Gaceta Médica de Mexico, Mexico City

55: 817-855. Supplement

Infant Mortality in Mexico. I. Espinosa.—p. 817.

Revista de Cirugía, Buenos Aires

4: 49-95 (April) 1925

*Cardiovascular Disturbances with Arteriovenous Aneurysms. R. Grégoire. —p. 52.
*Extirpation of the Tongue. Avelino Gutiérrez.—p. 55.
*Osteoplastic Operation on the Orbit. R. Finochietto.—p. 64.
*The Shoulder Sign of Perforated Ulcer. J. Bergareche.—p. 76.
Intussusception in Two Adults. Alberto Gutiérrez.—p. 83.
Subcutaneous and Intramuscular Hydatid Cysts. A. Buzzi and J. A. Mulcahy.—p. 94.

Effect of Aneurysm on the Heart.—Grégoire explains how the extra work thrown on the heart struggling to compensate for an arteriovenous aneurysm taxes it until it stalls, like an automobile engine. A weak heart action is not a warning against an operation but a direct call for it, as the heart is sound but merely forced beyond its capacity.

Removal of the Tongue.—Gutiérrez illustrates the technic he has successfully applied, but warns that the patient has, for a long time, to feed himself through a stomach tube. The glands must be removed, even with a small cancer in the tongue.

Operations on the Orbit.—Twenty-one illustrations show the steps of Finochietto's commissural osteoplastic orbitotomy, and the fine outcome in a clinical case of hydatid cyst in the orbit in an elderly woman.

Shoulder Pain with Perforated Ulcer.—Bergareche extols the instructive value of the sudden sharp pain in the shoulder with acute abdominal symptoms. This phrenic sign points to recent perforation of a gastric or duodenal ulcer.

Revista Médica Latino-Americana, Buenos Aires

10: 785-877 (April) 1925

*Generalized Hypoplasia of the Arteries. Elizalde and de Marval. —p. 785.
The Radial Pulse in Diagnosis of the Myocardium. Bosco.—p. 808.
*Influence of the Medium on Growth of Tissues. Roffo.—p. 818.
Cosmetic Operations on Nose. J. Basavilbaso.—p. 824.
Iodized Oil in Exploration of the Chest. Marque and Grosso.—p. 826.
Plant and Animal Parasites of the Skin. A. Pasqualis Politi.—p. 829. Cont'n.

Hypoplasia of the Arteries.—Elizalde and Marval state that eight of the twenty-three children of a brother and sister developed polyuria and polydipsia early, with leaden complexion, while the other members of the family had normal complexions and were otherwise normal. The urine contained

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Comparative Study of Serologic Tests. G. Vercellotti.—p. 62.
*Action of Acetone on the Liver and Kidney. B. Poliak.—p. 85.
Action of Spleen on the Pancreas. P. Berri.—p. 90.

Lipodieresis by Endocrine Glands.—Tedesco's research on beef endocrine glands has confirmed that the fat destroying power is most marked in the sympathicotonic organs.

Diathermy and Sedimentation Test.—A delay of from forty to ninety minutes was constantly observed in Puxeddu's sixty patients treated with diathermy.

Action of Acetone on the Liver and Kidneys.—Poliak's five dogs given acetone by the stomach tube all developed a degenerative hepatitis. When the liver was so incompetent that the acetone was not taken up by this organ, and some of it reached the kidneys, these organs also suffered, especially the convoluted tubules; otherwise not.

Archivos Latino-Amer. de Pediatría, Montevideo

19: 605-711 (Feb.) 1925

*The Thymus. J. Schwarzenberg Lobeck.—p. 605.
*Chronic Rheumatism from Congenital Syphilis. Acuña and Bazán.—p. 619.
*Meningeal Hemorrhage in the New-Born. Velasco and Paperini.—p. 682.

The Thymus.—This study of the thymus concludes with the remark that notwithstanding the intensive study of this organ in the last few years, our knowledge as to its physiologic rôle is still meager and vague. The only slight progress that has been realized is in the line of histology.

Chronic Rheumatism in Children with Congenital Syphilis.—Acuña and Bazán were never able to cure the children in their cases under any treatment; the general condition improved remarkably and the joint lesions were arrested, but they never retrogressed. In some cases rapid improvement was realized with sodium salicylate but mercury was required to make the benefit permanent. An important aid in the differential diagnosis is the absence of any symptoms on the part of the heart. Only one child presented a briefly transient pericardial friction sound. None of the ten children had chronic tonsillitis or sinusitis or gonococcus infection. A phase of acute febrile articular rheumatism was known in only a few of the ten cases. The clinical picture was that of ordinary chronic rheumatism except for the repeatedly positive Wassermann reaction, and the appreciable benefit from specific treatment. It is essential to start it early to ward off irreparable lesions. They advise intensive combined treatment, possibly supplemented with organotherapy.

Meningeal Hemorrhage in the New-Born.—Velasco and Paperini analyze their thirteen cases in which the child survived for more than twenty-four hours. Six of the infants recovered completely, with no apparent sequelae to date. In nineteen the hemorrhage proved promptly fatal. A yellowish tint of the lumbar puncture fluid or a uniform hemorrhagic aspect suggested the diagnosis, confirmed by the abnormal erythrocytes in the centrifuge sediment or crystals of hematin. They warn that even when surgical intervention is feasible, it should not be attempted before the fourth day, allowing time for a tendency to spontaneous recovery to become apparent, or the fatal outcome. If conditions look promising the fourth day, an operation should be considered with hemorrhage between the dura and the arachnoid or above the tentorium. Even at best, however, the mortality is still 50 per cent. In all the cases that came to necropsy, the hemorrhage was from the tentorium, and this seems beyond the reach of surgery, but medical measures may accomplish much, reducing the intracranial tension and promoting coagulation. Lumbar puncture aids in the former, and they never witnessed any harm from repeating it two or more times a day until improvement was evident. They found intraspinal injection of 10 to 30 c.c. of normal horse serum the most effectual measure for hemostasis, repeated daily, supplemented by intramuscular or subcutaneous injections of the serum, and possibly by subcutaneous injection of 10 or 20 c.c. of 10 per cent. solution of gelatin (14 per cent. cured in forty-two cases). They insist that every new-born infant suffering from birth trauma or with a history of antecedents suggesting infectious or toxic injury likely to render the blood vessels more fragile, should have lumbar puncture done at once after birth. This will reveal meningeal hemorrhage and be the first step in treatment. The diagnosis is aided by the obstetrical history, and tendency to asphyxia, dysphagia, taut fontanels, convulsions, stupor or comatose state, opisthotonus, rigidity, jaundice, etc.

Clinica, Montevideo

2: 19-39 (Feb.) 1925

*Mediastinal Tumors. L. Morquio and A. Volpe.—p. 19.
Mercury Test for Ether. J. C. Chiarino.—p. 32.
*Nipiology. R. Eyzaguirre.—p. 36.

Mediastinal Tumors.—The fatal tumor had originated in the thymus or in the tracheobronchial glands in the two children.

Nipiology.—Eyzaguirre pleads for the foundation of an institute exclusively for welfare work for infants too young to talk. The infant mortality of 25 per cent. in the first year of life shows the necessity for work in this line.

Gaceta Médica de Mexico, Mexico City

55: 817-855. Supplement

Infant Mortality in Mexico. I. Espinosa.—p. 817.

Revista de Cirugía, Buenos Aires

4: *49-95 (April) 1925*

*Cardiovascular Disturbances with Arteriovenous Aneurysms. R. Grégoire.—p. 52.
*Extirpation of the Tongue. Avelino Gutiérrez.—p. 55.
*Osteoplastic Operation on the Orbit. R. Finochietto.—p. 64.
*The Shoulder Sign of Perforated Ulcer. J. Bergareche.—p. 76.
Intussusception in Two Adults. Alberto Gutiérrez.—p. 83.
Subcutaneous and Intramuscular Hydatid Cysts. A. Buzzi and J. A. Mulcahy.—p. 94.

Effect of Aneurysm on the Heart.—Grégoire explains how the extra work thrown on the heart struggling to compensate for an arteriovenous aneurysm taxes it until it stalls, like an automobile engine. A weak heart action is not a warning against an operation but a direct call for it, as the heart is sound but merely forced beyond its capacity.

Removal of the Tongue.—Gutiérrez illustrates the technic he has successfully applied, but warns that the patient has, for a long time, to feed himself through a stomach tube. The glands must be removed, even with a small cancer in the tongue.

Operations on the Orbit.—Twenty-one illustrations show the steps of Finochietto's commissural osteoplastic orbitotomy, and the fine outcome in a clinical case of hydatid cyst in the orbit in an elderly woman.

Shoulder Pain with Perforated Ulcer.—Bergareche extols the instructive value of the sudden sharp pain in the shoulder with acute abdominal symptoms. This phrenic sign points to recent perforation of a gastric or duodenal ulcer.

Revista Médica Latino-Americana, Buenos Aires

10: *785-877* (April) 1925

*Generalized Hypoplasia of the Arteries. Elizalde and de Marval.—p. 785.
The Radial Pulse in Diagnosis of the Myocardium. *Bosco.—p. 808.*
*Influence of the Medium on Growth of Tissues. *Roffo.*—p. 818.
Cosmetic Operations on Nose. J. Basavilbaso.—p. 824.
Iodized Oil in Exploration of the Chest. Marque and Grosso.—p. 826.
Plant and Animal Parasites of the Skin. A. Pasqualis Politi.—p. 829. Cont'n.

Hypoplasia of the Arteries.—Elizalde and Marval state that eight of the twenty-three children of a brother and sister developed polyuria and polydipsia early, with leaden complexion, while the other members of the family had normal complexions and were otherwise normal. The urine contained large amounts of albumin but no casts; in time other symptoms developed, insomnia, hemorrhages, diarrhea, edema, headache and finally the complete picture of Bright's disease, speedily fatal. When several children had died, presenting this insidious and fatal sequence of symptoms, the parents requested a necropsy, and this explained at once the whole clinical picture as the arteries and especially the aorta were found abnormally small, corresponding to those of a child of 10 to 14 at most. None lived to be more than 25. They describe the eight cases in detail, remarking that the nine children in a still later generation are still too young to have developed the clinical picture and seem to be healthy. They add that they have been unable to find many communications on this nephritis connected with aplasia of the arteries, but Virchow described it as "chlorotic aortitis."

Influence of Potassium and Calcium on Development of Tissues Outside the Organism.—Roffo relates that the potassium ions promoted while the calcium checked development in his experiments.

Archiv für Gynäkologie, Berlin

125: 1-324 (May 23) 1925. Congress Report

*Postpartum Hemorrhages. W. Stoeckel.—p. 1.
Causes of Postpartum Hemorrhages. F. Kermauner.—p. 149.
*Leukorrhea. R. T. von Jaschke.—p. 224. Idem. C. Menge.—p. 251.

Pathology and Treatment of Postpartum Hemorrhages.—Stoeckel's report contains 143 pages and includes eighteen charts presenting the cases and results in numerous clinics under the different methods of treatment and his conclusions from this analysis.

Leukorrhea.—Jaschke says that the seat of the discharge may indicate the cause. The hypersecretion may depend on a primary disturbance of the affected portion of the genitals or disturbances higher in the genital tract. Vaginal discharge may occur from a defect in the vaginal wall, or pathologic flora, or changes of acidity. Vaginal douches for cleanliness may act as a foreign body irritation. Often leukorrhea affords the most important sign of inflammation of the genitals, usually gonorrheal, less often of oxyuriasis. Cervical discharge is chiefly caused by inflammations, especially gonorrheal. While uterine discharge is less frequent, the clinical significance is greater, as it generally appears only in grave purulent endometritis, with or without pyometra, as a concomitant manifestation of cancer of the uterus, or in tuberculosis of the uterine mucosa. Purely symptomatic treatment of the fluor often harms more than it helps. The vaginal discharge should be treated locally only after exclusion of a cervical or uterine source. Local treatment is ineffective if the extragenital cause is unknown or disregarded. He believes that psychogenic cases which fail to respond to the personality of the gynecologist belong to the psychiatrist. The application of mild astringents, as alum, aluminum acetate, or 1 per cent. zinc sulphate, is advised. In marked mucoid secretion mild solution of soda is helpful. Ethyl chlorid spray (Landecker) may be used. If this does not suffice, irrigation with 0.5 per cent. of lactic acid solution (Döderlein) seems to be the best method. Salomon had surprisingly good immediate results with raw skim milk, but the end-results were unsatisfactory.

Leukorrhea.—Menge points to the importance of genital hypersecretion caused primarily by extragenital disturbances. In the leukorrhea of virgins local treatment is strictly contraindicated. A pronounced yellow discharge developing from the white fluor suggests external irritation, as masturbation. He advocates outdoor life in the treatment of the white fluor. Bath treatments are highly recommended. Mineral mud baths seem to him best in genital hypoplastic conditions with hypersecretion, occurring with oligomenorrhea. Mineral waters also are prescribed for the obese. In menorrhagic conditions, sun baths are preferred. The traditional four weeks' time is usually insufficient. The combined administration of calcium salts is useful, especially in undernourished and anemic patients; a daily dose of 3 to 4 gm. suffices if continued for some time. This combination treatment, he says, likewise gives good results in all forms of vaginal discharge after defloration. Erosions in the vaginal wall are best treated with heavy metal salts, particularly silver nitrate. Success depends on the patience and care of the physician, the repeated introduction of the caustic solution into the vagina at one sitting, and the use of a suitable vaginal speculum (Trélat). Through this the vagina is bathed with a 2 per cent. silver nitrate solution carried on a dripping wet cotton sponge. The speculum is wiped off, fresh solution is introduced with a second sponge, and again brought into contact with the exposed vaginal surface. Finally, the vestibule and vulva are similarly treated. Ordinarily, one sitting suffices; repetition once or twice may be needed, at eight to ten day intervals. During the meantime, vaginal douches are given, using on alternate days mild zinc chlorid or copper sulphate solution and chamomile tea or salt water. The vaginal douche is kept up for several weeks. In cases with too narrow vagina, dilatation is advised to prevent recurrence.

Archiv für Verdauungskrankheiten, Berlin

35: 1-114 (April) 1925

Duodenocolonic Fistula in Cancer of Ascending Colon. G. Schilffarth. —p. 1.
Chemical Processes in Stomach in Gallstone Disease. L. v. Aldor.—p. 10.
*Rumination. G. Kohlmann.—p. 34.
Intra-Abdominal Adhesions. M. J. Lifschitz.—p. 58.
*Heartburn. F. Hirschberg.—p. 72.
*The Duodenum Contents. S. Frank and M. Schour.—p. 90.
Necrosis of the Pancreas. R. Tscherning.—p. 103.
Intervals in Normal Human Defecation. F. Schilling.—p. 108.

Etiology, Clinic and Roentgenology of Rumination.—From clinical and roentgenologic observations Kohlmann concludes that true rumination generally occurs in mentally and physically sound persons, most often males, usually beginning at the age of 6 to 12 years. It is almost always hereditary. L. R. Miller regards it as a kind of atavism. Roentgenograms (also necropsy) may show the stomach divided in two parts. He questions a connection between true rumination in adults and rumination in infants, which is often a pastime, irregular, and probably promoted by a neurotic tendency or exudative diathesis. True ruminants (adults) eat much and rapidly and chew again certain foods agreeable to the taste. When the food tastes sour, rumination ceases. The impulse to rumination can be repressed with difficulty, if at all. He found that the administration of atropin aids in checking rumination.

Heartburn in Diagnosis.—After clinical study of fifty-five cases of pyrosis, Hirschberg affirms that obstinate heartburn from acidity is often the only subjective symptom of gastric or duodenal ulcer. Hence far greater attention than hitherto should be accorded this condition.

Chemicomorphologic Examination of Duodenum Contents.—Frank and Schour's findings showed microscopic examination of the sediment of the duodenum contents and the test for albumin to be of the greatest practical value to date. In cases of protracted fever, the chemicomorphologic examination may aid in diagnosis by indicating early cholangitis or cholecystitis. Examination of the bile for urobilinogen should be supplemented by a similar test of the urine, as the latter confirms impairment of the liver function.

Deutsche medizinische Wochenschrift, Leipzig

51: 849-888 (May 22) 1925

*Spread of Tuberculosis. H. Beitzke.—p. 849.
Modified Wassermann's Tuberculosis Reaction. Reiter and Koster.—p. 851.
*Origin, Fate and Destination of Fluids of Eye. E. Seidel.—p. 851.
*Early Diagnosis and Treatment of Appendicitis. R. Mühsam.—p. 855.
*Transplantation of Ovary. F. Heimann.—p. 875.
*Sympathectomy for Subjective Sounds in the Ear. Brüning and Forster.—p. 860.
*Biologic Determination of "Bayer 205." R. Freund.—p. 861.
*Monocytosis in Malignant Endocarditis. F. Joseph.—p. 863.
*Serum Treatment of Streptococcus Septicemia. C. S. Engel.—p. 864.
Bacterioscopic Diagnosis of Lepra. Rosentul and Kruglak.—p. 866.
*Inhalation of Acid. A. Hartmann.—p. 867.
Diagnosis of Tuberculous Spondylitis. P. Pitzen.—p. 869.
Roentgenography of the Bronchi. C. Schelenz.—p. 870.
Microsporosis. Gottschalk.—p. 870.
External Application of Salicylates in Rheumatic Diseases. H. Prehm.—p. 871.
Progress in Psychiatry. A. Bostroem.—p. 872.
Chemical and Pharmaceutic Division of the German Museum. A. Hesse. —p. 874.
Etiology and Treatment of Rickets. W. Rosenthal.—p. 883. Conc'n.

Spread of Tuberculosis.—Beitzke believes that the allergic condition due to primary infection of lymph glands is the same as with a primary pulmonary focus. If the bacilli pass only through the mucous membrane and are destroyed, no allergy results.

Origin, Fate and Destination of Fluids of Eye.—Seidel concludes that the aqueous humor is secreted slowly, but continually by the ciliary body. It is resorbed chiefly by the osmotic pressure of the proteins of the blood.

Early Diagnosis and Treatment of Appendicitis.—Mühsam recommends to palpate in men by the rectum. If the appendix is deep in the pelvis there is frequently little or no muscular rigidity, but the right or anterior wall of the rectum is tender. Vaginal examination is necessary in women. He decides for surgical treatment at the first attack if at least one of the main symptoms (pain, pulse, rigid wall, meteorism, temperature or expression of the face) is grave. In the second attack, the operation is always indicated. He had a mortality of 2.2 per cent. in his 182 cases of appendicitis operated on within forty-eight hours after the onset.

Transplantation of Ovary.—Heimann implants between the rectus muscle and the peritoneum slices of the patient's own ovary when removing the adnexa. In one of his four cases the menstruation has persisted for four years to date.

Sympathectomy for Subjective Sounds in the Ear.—Brüning and Forster removed the left cervical sympathetic and decorticated the carotid artery in a man, 73 years of age, who was suffering from a continuous humming in the left ear. The patient who had been on the verge of despair, improved rapidly and was practically cured three months later. Tinnitus is sometimes amenable to treatment with strychnin, atropin or papaverin.

Biologic Determination of Bayer 205.—Freund investigated the reasons for the long protective action of "Bayer 205" against trypanosomiasis. He found that the serum of a rabbit injected with the preparation protects only mice which had been infected with regular trypanosomes. It did not influence the infection with trypanosomes which had been rendered resistant against Bayer 205. He concludes that this speaks against the formation of a new compound in the body, and for the assumption that "Bayer 205" is stored as such in the organism—probably in the reticulo-endothelial system.

Monocytosis in Malignant Endocarditis.—Joseph found in seven of eight cases of malignant endocarditis very large phagocytic monocytes with pseudopodia in the blood. They are more frequent with high leukocyte counts and after rubbing the ear or finger. A thick droplet reveals them more readily. He never saw this type of cells in other diseases.

Serum Treatment of Streptococcus Septicemia.—Engel attributes the success in his case to an additional injection of normal human serum (containing complement). The injection was followed by multiple localization of abscesses and recovery.

Inhalation of Acid.—Hartmann reviews the observation on the protective influence of inhalation of acids in factories and schools. Its action seems to be distinct in influenza, bronchitis and tuberculosis. An open dish with formic acid kept in the room exerts some influence. Chlorin hurts the tissues more than sulphur dioxid. Hydrochloric acid has a more pronounced action in tuberculosis and hay-fever.

Klinische Wochenschrift, Berlin

4: 1001-1048 (May 21) 1925

*Innervation of Glands. L. Asher.—p. 1001.
*Embryonic Heart. P. Stöhr, Jr.—p. 1004.
Treatment and Prevention of Goiter. A. Schwenkenbecher.—p. 1006.
*Oxygen Inhalation at High Altitudes. E. Stern.—p. 1009.
*Changes of Endothelium in Eclampsia. G. Domagk.—p. 1011.
Silver-Tannin Preparations. S. Loewe and F. Lange.—p. 1014.
*Colon Bacilli in the Digestive Tract. F. P. Tinozzi.—p. 1017.
*Roentgen Treatment of Inflammations. Cramer and Kalkbrenner.—p. 1019.
*Stability of Proteins of Blood Plasma. E. Wöhlisch.—p. 1022.
Making the Heart Current Audible. Lilienstein.—p. 1022.
Cholesterol in Serologic Reactions. A. Klopstock.—p. 1023.
The Hyperemia in Inflammation. E. Rajka.—p. 1024.
Periosteal Meningococcus Abscess. K. L. Pesch.—p. 1025.
*Bromin Treatment. E. Oppenheimer.—p. 1025.
Metaplasia. W. Stoeckenius.—p. 1029.

Innervation of Glands.—Asher reviews the influence of nerves on the function of glands. The fact that a gland works apparently equally well after denervation does not necessarily indicate that its finer regulation is not ruled by the nerves. The more relations a gland has to the external influences (for example, the salivary glands), the more pronounced the nervous regulation of its function. It seems that the secretory nerves obtain more economically the same end-result as the gland would achieve without their influence. He has always emphasized the significance of inorganic ions for the receptivity—perhaps the permeability—of the tissues.

Embryonic Heart.—Stöhr reimplanted the extirpated heart of frogs' embryos after twisting it 180 degrees. The heart developed normally if this was done at the stage of the open medullary plate. Hearts implanted in other embryos grew irregularly, but the size was larger than they would have reached otherwise. Some of them drew most of the blood from the heart of the host, which was smaller than in the controls.

Oxygen Inhalation at High Altitudes.—Stern found a reduction of frequency of respiration and of tremor after inhalation of oxygen at Davos (1,550 meters above sea level).

Changes of Endothelium in Eclampsia.—Domagk points to the swelling and proliferation of endothelial cells in eclampsia; they resemble those observed after parenteral injections of proteins or of germs. Patches of necrosis in the liver may be caused by occlusion of the capillaries by this proliferation. It also accounts for the soft tumor of the spleen in eclampsia without infectious complications. The residual nitrogen—indicating a strong cleavage of proteins—is high, especially in the spleen. Changes in the capillaries of the lungs may be the cause of cyanosis.

Colon Bacilli in the Digestive Tract.—Tinozzi asserts that the gastric juice always contains germs, which cannot be cultivated, however, unless the acidity conditions are abnormal. In three cases of pernicious anemia, colon bacilli were present in the stomach and especially in the duodenum. Their hemolytic properties are in no direct relation to the virulence. A closer parallelism seems to exist between their agglutinability and virulence.

Roentgen Treatment of Inflammations.—Cramer and Kalkbrenner recommend a superficial irradiation with 20 per cent. of the skin dose (HED) in beginning inflammation.

Stability of Proteins of Blood Plasma.—Wöhlisch investigated the causes of the different stability of beef and horse fibrinogen—the latter requiring less sodium chlorid for precipitation. The phenomenon is not due to dialyzable substances, nor to the other proteins of the plasma.

Bromin Treatment.—Oppenheimer deals with the theory and practice of bromin treatment. Bromin acne can be prevented or attenuated by simultaneous administration of Fowler's solution. The most suitable preparation is sodium bromid. It is not rational to allow bromids instead of chlorids for patients with edema.

Medizinische Klinik, Berlin

21: 761-798 (May 22) 1925

*Ear Diseases and Life Insurance. H. Frey.—p. 761.
*Siderosis of Lungs. E. Hoke.—p. 766.
*Treatment of Syphilitic Ulcers with Pyrogallic Acid. A. Buschke and O. Leissner.—p. 768.
Drainage of Chancroid Buboes. Schneemann.—p. 770.
*Tennis Elbow and Rupture of Muscle. G. Rosenburg.—p. 771.
Sedimentation Test in Tuberculosis of Children. Mündel.—p. 773.
*Suprarenogenital Syndrome. J. Ratner.—p. 775.
Tuberculosis Cavity Resembling Pneumothorax. H. Dreyfuss.—p. 777.
The Asthmatic Personality. H. Peiser.—p. 778. Conc'n.
*Inactivation Temperature in Syphilis. Schuler and Urech.—p. 781.
Pathogenesis and Treatment of Bronchial Asthma. G. Noah.—p. 783.
Tuberculosis of the Skin. J. Jadassohn and Martenstein. Supplement.—pp. 1-34.

Ear Diseases and Life Insurance.—Frey's paper shows the change taking place in the estimation of the chances in diseases of the ear. Patients with dry perforations of the ear drum have the same expectancy as healthy subjects. Yet even the chronic suppurations of the ear are considered good normal risks unless the perforation reaches the border of the tympanum (possibility of cholesteatoma). Only acute and chronic suppuration with signs of a tendency to spread have to be temporarily excluded.

Siderosis of Lungs.—Hoke emphasizes the frequent absence of physical signs with roentgenologically grave changes. An absence of shifting of the borders of the lungs with changes of position of the body is important. Young patients are in great danger of tuberculosis. In pneumoconiosis of long standing the tuberculosis is mild.

Treatment of Syphilitic Ulcers with Pyrogallic Acid.—uschke and Leissner had good results with pyrogallol in tment of two patients with syphilitic ulcerations resisting usual general and local treatment. They applied it in a per cent. ointment for two days; than 10 per cent. for two days; 20 per cent. for two days and 30 per cent. for eight days. The urine has to be controlled (black coloration with overdoses). Undermined edges have to be removed. The surrounding tissues should be protected with a zinc paste.

Tennis Elbow and Rupture of Muscle.—Rosenburg found a rupture of the long radial extensor muscle of the carpus due to tennis.

Suprarenogenital Syndrome.—Ratner observed recovery in a typical case of virilism and in a case of myxedema after expulsion of tenia and ascaris. He deals with the frequent abortive form of the suprarenogenital syndrome in women. They are of dark complexion; have the male distribution of hair; are usually fat; the joints may be overextended and the sclerotics are blue. The mental behavior resembles that of intelligent energetic men. They are predisposed to arthritis, gout and otosclerosis. Some are hypersexualized, others are frigid, with a dread of sexuality.

Inactivation Temperature in Tests for Syphilis.—Schuler and Urech confirm the equally good results with Takenomata's method (inactivation for five minutes at 60 C.) as with the usual thirty minutes at 55 C.

Münchener medizinische Wochenschrift, Munich

72: 841-882 (May 22) 1925

Acetylene Anesthesia. H. Schmidt.—p. 841.
*Physiology of Euthanasia. F. K. Walter.—p. 844.
*Common Feature of Action of Rays, Proteins and Insulin. E. Andersen. —p. 846.
Hyperplasias of Biliary Ducts. M. Budde—p. 848.
Gennerich's Endolumbar Treatment. U. Müllern-Aspegren.—p. 849.
Gas Metabolism in Diseases of the Thyroid. H. Jessen.—p. 851.
Subaqual Enteral Bath in Gynecology H. Ganssle.—p. 852.
*Action of Arsenous Acid on Leukocytes. W. Haase.—p. 854.
Pseudarthrosis in Old Fracture of Femur. M. Lange.—p. 854.
Treatment of Varicose Veins. F. Schlunk.—p. 856.
Llama Serum Against Syphilis. E. Kapff.—p. 858.
Roentgenography with Bucky's Shutter. A. Kohler.—p. 858.
Treatment of Fractures. F. Lange.—p. 860.
History of Stomach Tube. E. Ebstein.—p. 863.
Social Insurance Against Obstetrician. W. Evers.—p. 864.

Physiology of Euthanasia.—According to Walter, the preagonal disturbance of the sensorium may be regarded as a toxic symptomatic psychosis. He found an increased permeability of the meninges which may account for it. While normal people taking bromids have three times more bromin in the serum than in the cerebrospinal fluid (quotient between 2.90 and 3.30), the figures are much lower in the agony (from 2.49 to 1.38).

Common Feature of Action of Rays, Proteins and Insulin.—Andersen discusses the changes of the acid-base equilibrium. He recommends a diet containing much oatmeal and salt as acidotic adjuvans of the treatment—especially in malignant tumor.

Action of Arsenous Acid on Leukocytes.—Haase noted a decrease in neutrophils, while the absolute number of lymphocytes remained stationary, thus causing a relative lymphocytosis.

72: 883-930 (May 29) 1925

*Irradiation, Skin and Vegetative System. Bucky and Müller.—p. 883.
*Temporary Roentgen Castration of Women. L. Schönholz.—p. 886.
*Peculiarities of Meningitis Forms. P. Ohnacker.—p. 888.
*Beginning Caries of Teeth. H. C. Greve.—p. 889.
*Loss of Water in Surgery. Lurz and Rupp.—p. 890.
*Nuclei of Leukocytes in Syphilis. J. Antoni.—p. 891.
Hemolysin Reaction in Syphilis. Memmesheimer.—p. 893.
Iron in Cerebral Cortex and Meninges in Syphilis. H. Pette.—p. 894.
The Bladder in Spinal Disease. Schwarz and Perlmann.—p. 896.
*Abdominal Symptoms in Disease of Chest Organs. Kaiser.—p. 897.
*Labile Proteins. O. Loew.—p. 898.
*Nature and Cause of Cardiac Edema. Jankowsky.—p. 900.
Subacute Pancreatitis. M. Baumann.—p. 904.
Fibrous Myositis After Illuminating Gas. Janossy.—p. 905.
Age for Tonsillotomy in Children. K. Ochsenius.—p. 906.
Plethysmography. P. Uhlenbruck.—p. 906.
Mistakes and Changes. Friedlander.—p. 906.
*Nicotin and Digestion. F. Cramer.—p. 908.

Irradiation, Skin and Vegetable System.—Bucky and Müller used extremely soft roentgen rays which were absorbed entirely in the superficial layers of the skin. A certain dose applied in a certain time (at least 1/16 of the erythema dose on 1 square cm. in 15 seconds) produced leukopenia—probably by acting on the parasympathetic system.

Temporary Roentgen Castration of Women.—Schönholz would restrict the temporary roentgen castration to women who are not apt to bear children any more. The danger of malformations in children born even years after the irradiation is great—not to mention the malformations to be expected in the second generation.

Peculiarities of Meningitis Forms.—Ohnacker regrets the passive attitude in meningitis with lymphocytosis and positive Pándy reaction in the fluid. These changes are not necessarily proof of the tuberculous nature. They may occur even in a meningitis from abscess of the right temporal lobe, and are accessible to treatment.

Beginning Caries of Teeth.—Greve points out that streptococci cannot penetrate into the enamel because the interprismatic spaces are only 0.5 micron in diameter. The caries begins by destruction of the superficial membrane by plaques of bacilli.

Loss and Restoration of Water in Surgery.—Lurz and Rupp found that the patients lose within forty-eight hours after surgical operations 0.5 to 1.5 liters of water. Sodium chlorid is retained, and therefore isotonic infusions or other ways of introducing salt are contraindicated. Rectal administration of salt-free solutions (tea) lowers the thirst.

Nuclei of Leukocytes in Syphilis.—Antoni found with a special method indications of chromatolysis and of peculiar canals in the nuclei of the cells of the circulating blood, lymph nodes and primary sclerosis in syphilis.

Abdominal Symptoms in Thoracic Disease.—Among the better known diagnostic mistakes (pleurisy, pneumonia, tuberculosis) Kaiser emphasizes a syndrome which he calls the pseudocancer form of senile pulmonary tuberculosis. The cachectic aspect, dislike for meat, digestive disturbances, and occasional pain in swallowing suggest a cancer of the stomach or esophagus.

Labile Proteins.—Loew explains the difference between the proteins of the living and dead cells by a lability of the former, which may be due to loose aldehyde groups. Therefore substances which do not affect the ordinary "passive" proteins, kill the living cells. He believes that the labile proteins originate from a condensation of the—as yet unknown—aldehyde of the asparagic acid. He demonstrated besides this microchemically a peculiar protein in vegetable cells, which stands between the labile and the reserve proteins.

Nature and Cause of Cardiac Edema.—Jankowsky refuses to admit stasis as cause of cardiac hydrops: It is a disease *sui generis,* due probably to a pluriglandular insufficiency and active dilatation of the capillaries.

Nicotin and Digestion.—Crämer believes that a leech sucking blood from a habitual smoker dies in convulsions. Nicotin is as toxic as potassium cyanid. A cigar weighing 6 gm. and containing 5 per cent. nicotin kills, if eaten. He believes that 100 cigarettes smoked in one day may cause death. Tobacco contains from 0.5 to 5 per cent. nicotin. About one third of it appears in the smoke. Much is left in the last part of the cigar. Moist tobacco is worse because no nicotin is destroyed. The method of smoking and the constitution of the smoker has much influence. He himself is severely injured by even a few cigars. Leukoplakia of the tongue, vomiting in the morning, cardiospasm and pylorospasm, hypersecretion and achylia may occur. Ortner described the syndrome of intermittent angiosclerotic dyspepsia, which is frequently due to abuse of nicotin. The periodic ischemia of the intestine causes painful attacks of meteorism, and fetid stools. Spasms of the intestine, with diarrhea and constipation, are frequent. Idiopathic spasms of the sphincter ani muscle and subsequent hemorrhoidal disturbances may be caused by smoking. Hiccup and hives have been observed.

Zeitschrift für Tuberkulose, Leipzig

42: 353-448 (May) 1925

Early Tuberculous Foci in Lung Apex in Children. G. Simon.—p. 353.
Complement Deviation in Tuberculosis. Scheidemandel.—p. 363.
Fever as a Vegetative Neurosis. F. Glaser.—p. 376.
Prodromal Period in Pulmonary Tuberculosis. N. I. Muchin.—p. 380.
Separation of Adhesions; Formation of Exudate. M. Kallweit.—p. 382.
New Measures Needed in Campaign Against Tuberculosis. v. Möller.—p. 388.
Work for the Tuberculous. Kirchner.—p. 398.
New Drugs and Foods for the Tuberculous. Schröder.—p. 411.

Zentralblatt für Chirurgie, Leipzig

52: 1169-1232 (May 30) 1925

*Circular Suture of Carotid Artery. A. Israel.—p. 1169.
Hydrocele Muliebris Simulating Strangulated Hernia. R. Andler.—p. 1171.
Operation for Inguinal Hernia in Female. Solms.—p. 1173.

Gunshot Injury and Circular Suture of Common Carotid Artery.—Israel reports a case of gunshot wound below the cricoid cartilage, with no bleeding, in a young boy. Roentgen examination a week later, preliminary to excision of the bullet, revealed slight pulsation of the shadow. On incision a profuse arterial hemorrhage occurred. The small bullet was in the anterior wall of the common carotid artery and the boy recovered after resection. The case, he says, recalls the war-time experience that seemingly slight gunshot wounds near large blood vessels may be dangerous.

52: 1233-1296 (June 6) 1925

Multiple Cysticercus in Stomach Serosa. L. P. Mariantschik.—p. 1234.
*Acute "Idiopathic" Serous Peritonitis. K. Koch.—p. 1240.
Fastening Head of Humerus in Habitual Dislocation of Shoulder. M. Wülfing.—p. 1244.
*Radical Treatment of Sigmoid. N. M. Sawkoff.—p. 1247.
Origin of Sliding Hernia. J. Fleissig.—p. 1249.
Mesenteritis and Volvulus of Jejunum. B. Dragun.—p. 1254.
*Mayo Tube in Inhalation Anesthesia. T. Fohl.—p. 1256.
*Spontaneous Breaking Up of Calculi in Gallbladder. Kaiser.—p. 1257.
"Operative Method for Lengthening Leg." Kausch.—p. 1260.

Etiology of Acute "Idiopathic" Peritonitis.—Koch found a profuse, clear peritoneal effusion and histologic examination of the appendix showed an inflammatory irritation of the submucosa extending into the subserosa. He notes that in eight of Melchior's cases of acute "idiopathic" serous peritonitis no histologic examination of the appendix was reported. In his opinion, the assumption of acute serous peritonitis as a distinct entity is not well grounded, and the material testifies against rather than for an idiopathic origin.

Radical Treatment of Sigmoid Flexure.—Sawkoff describes the technic of evagination of the sigmoid into the pelvic and rectal colon (Grekoff). It is not opened until it has all been drawn out through the anus. Then a long drainage tube is introduced high up, the entire drawn-out portion of the intestine is fastened to the drainage tube and to the skin of the anus. The evaginated gangrenous sigmoid and the drainage tube usually slough off by the tenth to twelfth day.

Mayo Tube in Inhalation Anesthesia.—Fohl had excellent results with the Mayo tube, which, he says, marks an advance in anesthesia technic for general use.

Spontaneous Breaking Up of Calculi in Gallbladder.—Kaiser's case in a woman, aged 27, presented gallbladder contents of a whitish, opalescent color, due to the dissolution of a cholesterol calculus, that is, to an emulsifying of the cholesterol crystals in the homogeneous gelatinous mass.

Zentralblatt für Gynäkologie, Leipzig

49: 1169-1216 (May 30) 1925

Uterine Adenomyosis and Extragenital Fibro-Adenomatosis. Meyer.—p. 1170.
Preliminary Irradiation in Cancer of Cervix. W. Fürst.—p. 1180.
Sudden Deaths in the Puerperium. H. O. Neumann.—p. 1181.
*Hemorrhagic Tears of Cervix. T. Johannsen.—p. 1185.
"Economy in Catgut." W. Holz.—p. 1188.
Treatment of Vaginal *Hypersecretion. Hausdorff.*—p. 1189.
Radium Therapy, 1914 to 1921. W. Polubinsky.—p. 1193.

Treatment of Hemorrhagic Tears of the Cervix After Spontaneous Delivery.—Johannsen describes the three cases requiring treatment encountered by him in a twenty-year period. He believes that the safe suture of such tears should offer the experienced practitioner no difficulty.

49: 1217-1296 (June 6) 1925

Acetylene Anesthesia with Rebreathing Apparatus. Gauss.—p. 1218.
*Induced Delivery in Narrow Pelvis. Zangemeister and Baer.—p. 1226.
Evacuation of Uterus in Abortion. T. Heynemann.—p. 1236.
Tumors of Generative Glands in Hermaphrodites and Pseudohermaphrodites. R. Meyer.—p. 1244.
*Removal of Gravid Uterus in Pulmonary Tuberculosis. Hornung.—p. 1250.
Local Anesthesia in Gynecology. J. Frigyesi.—p. 1254.
Obstetric Examination by Rectum in General Practice. Arns.—p. 1261.
Diagnosis of Coiling of Umbilical Cord. Sahler.—p. 1264.
Gage for Study of Constitution. Flatau and Kirstein.—p. 1266.

Term for Induced Delivery in Narrow Pelvis.—Zangemeister and Baer's method is based on the induction of labor while the size of the fetus allows uncomplicated passage of the head. By a graph they indicate for every degree of contracted pelvis how many grams below the weight of a full term infant the fetus must be on the interruption of the pregnancy. Measurement of the diagonal conjugate is misleading. Exact measurement of the true conjugate is essential. For this Zangemeister's pelvimeter was most satisfactory. Careful estimate of the size of the fetus, especially the fetal head, is also required. Examinations are made at increasingly short intervals during pregnancy. As soon as the maximum allowable weight is reached, labor is induced by Zweifel's bag. In order to safeguard the child, they try to avoid interference when the fetal weight is below 2,400 gm. Their total fetal mortality of only 6 per cent. in ninety-six cases is, they say, unequalled to date in delivery with contracted pelvis.

Vaginal Hysterectomy in Tuberculous Pregnant Women.—When interruption of pregnancy and sterilization become necessary in pulmonary tuberculosis, Hornung considers colpohysterectomy under local anesthesia the preferred method.

Časopis lékařů českých, Prague

64: 805-840 (May 23) 1925

Charcot. A. Heveroch.—p. 805.
*Biologic Significance of Internal Secretion. V. Laufberger.—p. 806.
*Treatment of Endarteritis Obliterans. F. Vanýsek.—p. 809.
*Coexistence of Myoma and Cancer of Uterus. K. Klaus.—p. 811.
*Vitamin A and Its Relation to Calcium. K. Teige.—p. 814.
*Action of Insulin. S. Janoušek.—p. 814.
Iodized Oil in Roentgenology of Cord and Lungs. Pátek.—p. 820.
*Cataract from Lightning. F. Richter.—p. 821.
*Poisoning by Gas Developing from a Fertilizer. H. Fuchs.—p. 822.
*Migration of a Bullet in the Body. J. Procházka.—p. 822.
*Insulin as a Nonspecific Roborant. J. Charvát.—p. 822.

Biologic Significance of Internal Secretion.—Laufberger surveys the phylogenetic development of hormones. It seems that their chemical constitution developed in the phase between unicellular organisms and the vertebrates. Then they became stabilized, and the further evolution was made by the changes of the organic medium in which they act.

Treatment of Endarteritis Obliterans by Injection of Radium Emanation.—Vanýsek reports fair results in treatment of obliterating endarteritis with subcutaneous injections of radium emanation.

Coexistence of Myoma and Cancer of Uterus.—Klaus presents statistics on 2,216 hysterectomies. In thirty-two of these cases a myoma was associated with a cancer (in 0.9 per cent. of the myoma cases, a cancer of the corpus uteri; in 1.8 per cent., cancer of the cervix).

Vitamin A and Its Relation to Calcium.—Teige believes that the vitamin A is a ferment which causes in the liver the synthesis of urea from ammonia and carbon dioxid. He thinks that an increased amount of ammonia and amins circulating in the blood in avitaminosis produces disturbances of the calcium metabolism by formation of compounds with the calcium.

Action of Insulin.—Janoušek found an alkaline shifting of the hydrogen ion concentration of the portal blood after injections of insulin in rabbits.

Cataract from Lightning.—Richter observed a cataract in both eyes of a young man who had been struck by lightning thirteen years before, and noticed his bad eyesight soon afterwards.

Poisoning by Gas Developing from a Fertilizer.—Fuchs observed a disturbance of the sensorium, headaches and dyspnea in a farm laborer who had been spreading a fertilizer. The powder had an odor resembling illuminating gas.

Migration of a Bullet in the Body.—Procházka's patient had in 1918 a wound in the chest which was considered superficial. In 1923 he complained of pains in the right side; in 1924 he had albuminuria and transitory jaundice. In 1925 a bullet was eliminated by the urine after two grave attacks of pains.

Insulin as Nonspecific Roborant.—Charvát had good results with insulin treatment in emaciation from exophthalmic goiter. Yet he has the impression that it is only a symptomatic remedy changing a thin exophthalmic goiter patient into a stout one. He believes that it is a nonspecific roborant, and he had good results in patients who wanted to gain in weight.

Tohoku Journal of Experimental Medicine, Sendai

5: 429-578 (March 31) 1925

Micromethod for Estimation of Lactic Acid in Blood, Urine and Milk. R. Tsukasaki.—p. 429.
*Hypophosphatemia from Insulin. T. Kurokawa.—p. 438.
Bacilli Resembling Paratyphoid A. Aoki et al.—p. 452.
Hemolytic Action of Blood of Cold-Blooded Animals. Mitomo.—p. 482.
Reactions in Anaphylactic Shock. F. Nakazawa.—p. 528.
Parenteral Protein and Tissue Respiration. Nakazawa.—p. 546.
Epinephrin Content of Dog's Suprarenals After Ether Anesthesia. I. Fujii.—p. 566.
Epinephrin Content of Rabbit's Suprarenals After Unilateral Splanchnectomy. S. Hirayama.—p. 573.

Hypophosphatemia from Insulin.—Kurokawa found that the administration of insulin reduced the amount of inorganic phosphate in the blood, with hypoglycemia. The injection of glucose and epinephrin similarly influenced the inorganic phosphate in the blood, as did the injection of atropin and pilocarpin, the former with hyperglycemia, the latter without effect on the blood sugar. The change in the blood sugar level after insulin followed the injection of inorganic phosphate. He therefore concludes that the reduction of the inorganic phosphate in the blood bears no causal relation to the hypoglycemia.

Acta Chirurgica Scandinavica, Stockholm

59: 91-184 (May 20) 1925

*Spasms of Digestive Tract. A. Jirásek.—p. 91.
Hydronephrosis. G. Söderlund.—p. 100.
*Postoperative Jejunal Ulcer. E. Michaelsson.—p. 139.
*Three Cases of Embolectomy. R. Torell.—p. 171.
Incarcerated Hernia in Foramen of Winslow. A. Westman.—p. 181.

Intramural Causes of Spasms of Digestive Tract.—Jirásek states that degenerative lesions in the cells of Auerbach's plexus may be one of the intramural causes. In spasms of the digestive tract from such lesions resection and administration of antispasmodics are futile.

Postoperative Jejunal Ulcer in Children.—Michaelsson reports two cases after gastro-enterostomy, in girls, aged 14 and 18, both with a history of symptoms of peptic ulcer, from the tenth or fourteenth year. It seems to him justifiable to rank alike ulcers in children and in adults. Ulcer symptoms, he says, are known to occur also in infants. He found in 911 cases of gastric or duodenal ulcer at Stockholm that 1.2 per cent. were under the age of 15.

Three Cases of Embolectomy.—In one of Torell's cases the operation was made five hours after the onset of the symptoms, in a woman, aged 82, with heart disease and hemiplegia. The relief from pain was immediate, and gangrene was probably averted. Amputation was required later in another case and the attempted embolectomy failed in the third case. Necropsy revealed a second embolus that had escaped detection.

Norsk Magazin for Lægevidenskaben, Oslo

86: 525-636 (June) 1925

Polya's Resection Treatment of Gastric and Duodenal Ulcer. E. F. Lindboe.—p. 525.
Five Calculi in Each Ureter. E. F. Lindboe.—p. 536.
*Cellular Changes from Vitamin Starvation. P. Henriksen.—p. 540.
Action of "Sterilette." H. Natvig.—p. 546.
Flash-Glimpse Lantern for Testing Color Vision. H. Schiøtz.—p. 549.
Surgical Treatment of Gastric and Duodenal Ulcers. Nicolaysen.—p. 553.
*Oxygen Poisoning. K. Hansen.—p. 565.
Hematologic Methods and Critical Estimate of Findings. T. Brandt.—p. 580.
Iodin Prophylaxis of Goiter. J. Nicolaysen.—p. 582.

Cellular Changes from Vitamin Starvation.—Henriksen found extensive cell degeneration in the liver, spleen, kidneys and suprarenals in guinea-pigs and rats, with the same course as previously observed in muscles and nerves. The fulminating process in vitamin starvation in the guinea-pig causes death before resorption occurs, is unequally manifest in the tissues, and may lead to multiple necrosis. The diffuse and protracted process in the rat is more regular, with diffuse resorption of chromatin and cell protoplasm. While the clinical course differs, the changes in the various cells are similar. He believes that vitamin starvation primarily affects the cell nuclei, probably in connection with their bound fat components. If vitamins are given early in the starvation period, regeneration occurs and most of the cells rapidly regain their normal affinity for stains.

Oxygen Poisoning.—Hansen describes the apparatus used in his tests of the effect of partial pressure of several atmospheres of oxygen on living organisms, first investigated by Bert about 1870. He observed, in his experiments on animals subjected to oxygen pressure of three, four, five, and ten to twelve atmospheres, a clinical picture showing toxic action: reversible paralysis of mental and physical functions. In warm-blooded vertebrates convulsions occurred, especially on sudden increase of the oxygen pressure. Decreased carbon dioxid production and lowered body temperature are also characteristic. The study of oxygen poisoning, he believes, affords a valuable means for deeper understanding of the vital processes of metabolism.

Ugeskrift for Læger, Copenhagen

87: 517-528 (May 28) 1925

*Treatment with Metal Salts. L. E. Walbum.—p. 517. Conc'n., p. 529.
"Gold Salts in Experimental Tuberculosis." O. Bang.—p. 523.

Treatment with Metal Salts.—In his research on the action of the different salts on goats and rabbits immunized against the colon bacillus, Walbum found great variation. Beryllium chlorid was the most active in enhancing the formation of colon bacillus agglutinins. In the manganese, silver, iron and platinum group the effect on agglutinins and amboceptors increased as the atomic weight decreased; in the calcium group, as the atomic weight increased. In the manganese and calcium groups the action on bacteriolysis and lipase increased as the atomic weight decreased. Small amounts of manganese raised the normal power of the organism to oxidize bacterial toxins. Certain small concentrations of caesium and iridium injected in mice infected with ratin bacilli rendered the organism absolutely immune to this otherwise fatal infection. In mice and guinea-pigs infected with tubercle bacilli, signs of tuberculosis were apparent after the injection of metal salts, while other metal salts, in certain concentrations, seemed capable of oxidizing the tuberculosis toxin. The concentration which acts most favorably on antibody formation is shown by curves to be too low to stimulate growth of the tubercle bacilli. This fact he considers the chief basis for the therapeutic administration of salts of metals in small doses. He states in general that small doses are harmless, but large doses practically always harmful, apart from the metal salt poisoning, because they not only stimulate bacilli growth but also weaken the natural defenses of the organism. He questions the possibility of determining from experimentation on animals the optimal concentration for man in different infections.

87: 529-544 (June 4) 1925

*Case of Acute Leukemia. M. C. Lottrup.—p. 535.
Case of Complicated Hypertension. L. C. Stage.—p. 537.

Case of Acute Leukemia.—Lottrup describes the acute leukosis in a boy, aged 13, with large and small myeloblasts, and discusses the difficulties of differential diagnosis in leukemia.

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PARANASAL SINUS DISEASE IN INFANTS AND YOUNG CHILDREN [*]

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The complications of paranasal sinus infection in infants and young children are numerous. Acute suppurative paranasal sinus disease and acute suppurative otitis media go together. Numerous ocular conditions, phlyctenular conjunctivitis, iritis, retrobulbar neuritis and choroiditis are usually benefited by the treatment of the coexistent paranasal sinus disease. Dr. McCullough of New York has seen three cases of retrobulbar neuritis secondary to paranasal sinus disease in children under 14 years of age. Dr. White of Boston, recalls several cases of involvement of the optic nerve of children 5 years of age and older. Dr. Gregg of Sioux Falls had a similar case in a child, aged 8 years.

There may be an interdependence between chronic multiple infectious arthritis and paranasal sinus disease in infants and young children. The absorption of bacterial protein from an infection of the sinus may be an etiologic factor in the causation of asthma in childhood. In a child, aged 7 years, as a result of treatment for paranasal sinus disease, attacks of asthma were diminished from at least one attack a month to one mild attack in a year. The cases that have been benefited by treatment are naturally those in which the inhalation of dust and the ingestion of food had no effect on the asthma.

Dr. Byfield reports one patient, aged 11 years, that has had asthma for nine years. The attacks came on at intervals of about a week previous to his admission; since the nasal sinuses were treated, he has had one attack in the course of a year. Similar results were secured in a boy, aged 8 years, and one, aged 12 years.

Harmon Smith makes the statement that pharyngitis, laryngitis and bronchitis, particularly in children, are very frequently the result of paranasal sinus disease.

Osteomyelitis of the bone surrounding the diseased sinus may occur. Cavernous sinus phlebitis, meningitis, and in young children, but not infants, brain abscess may occur.

Dr. A. G. Andrews of Chicago reports finding at the necropsy of a child, aged 6 years, meningitis with necrosis of the roof of the sphenoid. The presence of paranasal sinus disease was not suspected before death.

Recurrent fever in infants and young children without apparent cause is sometimes due to disease of the paranasal sinuses.

Three years ago, I. H., a boy, then 7 years of age, was referred to us by Dr. Byfield. He gave a history of attacks of sudden elevation of temperature of about 102 F. without apparent cause. During the attacks of fever, the boy was not ill. He seemed slightly indisposed, and the fever was found by the use of the thermometer. This condition had begun at about the age of 2. It had been made better by the removal of the tonsils and adenoids one year before, but persisted. Three years ago the paranasal sinus disease that was present was eradicated, and his trouble has completely disappeared.

Periodic vomiting may be associated with disease of the paranasal sinuses.

F. M., aged 6 years, suffered from attacks of recurring fever with vomiting. These attacks were complicated by acidosis. The eradication of the ethmoiditis resulted in a disappearance of the attacks of vomiting and fever. The work on his paranasal sinuses was done almost four and one-half years ago. He has had no recurrence of this trouble.

Cervical adenitis is frequently an important complication of paranasal sinus disease.

Sinuses, when diseased, may be a focus of infection at the age of 3:

Dec. 4, 1918, E. T., a girl, aged 3, was referred to us by Dr. Steindler for examination for a focus of infection in the upper respiratory tract. His diagnosis was chronic multiple infectious arthritis. We found chronic tonsillitis, adenoids and bilateral maxillary sinusitis. A hemolytic streptococcus was secured from both the maxillary sinuses and from the tonsils, which, when injected into a rabbit, caused arthritis. The tonsils and adenoids were removed, and the diseased maxillary sinuses were treated by simple irrigation with protargin mild. The sinus disease apparently disappeared but, while the arthritis was improved, it persisted. Six months later an opening was made in each maxillary sinus through the antromeatal wall, and the sinuses were treated. The sinus disease disappeared, and with it the acute joint trouble. Two years after this, July 6, 1920, the mother brought her into the pediatric service. The mother stated that since the little girl had left the hospital she had been much improved; the first year she had had perfect health apparently, but the next winter, following a severe cold, she had had considerable nasal discharge. There was no trouble with arthritis at this time; then two weeks before coming to the pediatric service she had developed a stiff and swollen ankle. Examination revealed pus in each maxillary sinus. A small opening was made in the antromeatal wall, and the maxillary sinus was irrigated. The maxillary sinus disease disappeared, and with it the acute manifestations of the arthritis. The result is apparently permanent.

Jeans[1] says:

> Improvement following the treatment of sinusitis in many instances has been so definite and marked as to be convincing as to the rôle this infection had played. To see a child with deforming arthritis associated with severe bouts of fever become comfortable and afebrile and to see function gradually

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[*] From the Otolaryngologic Service, University Hospital.

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[1] Jeans, P. C.: Tr. Am. Laryngol. A., 1925.

restored as a result of treatment of sinus disease is impressive, especially when in former years one has been accustomed to see all efforts unavailing and the disease become progressively worse.

He further said:

> Any condition in infants and young children that may result from a focus of infection may result from sinus disease. Among such conditions may be included the following: Cardiopathies, rheumatic fever, chorea, nephritis, pyelitis, certain cases of cyclic vomiting, deforming periarthritis, anemia, anorexia, malnutrition and chronic digestive disturbance.

Certain remote effects seem more or less peculiar to sinus disease. Several writers have emphasized the relationship between sinusitis and subacute laryngitis, bronchitis, bronchiectasis, some pneumonias and certain cases of asthma. Jeans also mentions an acute illness in infancy with symptoms referable chiefly to the gastro-intestinal tract and with such severity that death results if the condition is not relieved. Such an infant 2 months of age was referred to our service by Dr. Jeans, and recovered promptly on treatment of the acute paranasal sinus disease.

Marriott[2] says:

> About six years ago, at the meeting of the Journal Club of the St. Louis Children's Hospital, Dr. Jeans reviewed an article on the subject of "Sinus Infections in Childhood and Their Effects." That was the start of a new era for us. Until that time, we, like other pediatricians, had an idea that children didn't get sinus infections very often, that when they did there were definite symptoms, perhaps headache or something of that kind, and that the diagnosis would be made with no difficulty. It never occurred to us that there might be remote and important effects from this infection. I asked Dr. Sluder about this, and Dr. Sluder came to the hospital, saw some of the children in question, found that they had sinus infections, and had several of his well trained associates come to the hospital at regular intervals. At present, in our wards, at almost any time in the year, more than half of all the children in the hospital are under treatment for some form of paranasal sinus infection.

He mentions a form of chronic interstitial nephritis accompanied by marked edema, diminished urine with large amounts of albumin, but without any change in the blood pressure; also, changes very frequently associated with staphylococcus infection of the nasosinuses, particularly the maxillary sinus.

> When these staphylococcus infections of the nasal sinuses were cleared up by drainage or irrigation, this peculiar substance present in the blood and urine completely disappeared and, at the time that it disappeared, all the symptoms of nephritis, these patients changing from swollen, edematous children to normal individuals, to remain normal, unless a second attack of sinusitis occurs.

Paranasal sinuses are present in infants and young children. The ethmoidal cells are always present at birth; the maxillary sinus is only rarely absent. Only rarely is the sphenoidal sinus present at birth as a bony cell. Dr. J. Parsons Schaeffer informed me that occasionally at birth the sphenoidal sinus would be of sufficient size to be diseased. The frontal sinus is never present during the first year.

In infants and young children, the paranasal sinuses may be very precocious. At necropsy in a child, aged 5 years, 5 months, I have found a diseased sphenoidal sinus measuring 18 by 10 by 19 mm.; it was as large as an average adult sphenoidal sinus.

The pathologic changes in sinus disease in infants and young children are not different from those in the adult. We find even in infants, especially when there are complications of a more or less chronic nature, as chronic infectious arthritis, the characteristic changes of chronic adult paranasal sinus disease.[3] We find thickened epithelial linings in some cases, with cells of the transitional type. At times, typical metaplasia is present. Beginning cyst formation in the mucous glands, infiltration of the mucous membrane with inflammatory cells, is often found.

The stroma of the mucosa may be a dense fibrous tissue. Typical subepithelial granulation tissue may be present. Bone changes may be marked. There may be an enormously thickened periosteum infiltrated with inflammatory cells. The bone may show erosion and the deposition of poorly calcified bone. There may be abscesses in the bone. The spaces in the bone, the result of absorption, may be filled with fibrous tissue with distinct telangiectases of the blood vessels. Small polyps in the sinuses are often noted.

In studying paranasal sinus disease in infants and young children, the greatest benefit to be derived from roentgen-ray examination is to tell whether or not a given sinus is present, and if present whether, on an anatomic basis, it has clinical significance. The importance of its study approaches that of its study in the adult.

At necropsy I have seen an unsuspected necrosis of the ethmoids in an infant, aged 16 months. I have seen a 2 months' old infant, the cause of whose death, two pathologists stated after necropsy, was a paranasal sinus infection. Another infant, aged 6 weeks, died while it was under treatment for acute paranasal sinus disease. This infant had pus under pressure in every paranasal sinus. The pathologist stated that sinus disease was the cause of death.

An examination of the nose through the mouth in cases of posterior clefts in infants from 12 to 18 months of age frequently reveals unmistakable evidence of paranasal sinus infection. I think that the most common cause of a poor result from an operation on a posterior cleft in my service is the presence of an incurable paranasal sinus infection.

Important etiologic factors in the production of paranasal sinus disease are climate and diet. Moist, cold, changeable weather predisposes, as does also a diet poor in fats. The most common source of infection of the sinuses is from adenoids and diseased tonsils. Not only do these structures infect the paranasal sinuses by direct contiguity of tissue and through the lymphatics, but adenoids at least may mechanically cause infection of the sinuses.

In some of Warren Davis' specimens I noted that large bunches of adenoids extended from the nasopharynx downward and forward so far as to form, with the roof of the nose, an angle of about 60 degrees. Such a condition is naturally the best kind of a trap for the collection of secretion, which is driven backward in the nose to the nasopharynx. Adenoids in this way may keep constantly in the upper posterior part of the nose a mass of secretion which, being stagnant, would soon become mucopurulent. This is one of the ways in which adenoids may cause sinusitis.

In cases of congenital atresia of the posterior nares that have come under my care, all the children have suffered from paranasal sinus disease. Through the

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2. Marriott, W. M.: Tr. Am. Laryngol. A., 1925.

3. Dean, L. W.: Tr. Am. Laryngol., Rhinol. & Otol. Soc., 1925.

kindness of Dr. Prentiss in the anatomic laboratory, I saw a dissection of the head of a man, apparently 45 years of age, with a congenital bilateral bony occlusion of the anterior nares. It is interesting that the sinuses of this person were perfectly normal. Acute infectious diseases, especially influenza, are responsible for many cases of sinus disease.

The symptoms of paranasal sinus disease in infants and young children are nasal discharge and nasal stoppage. The history of postnasal discharge so common in adults is conspicuous by its absence; infants and young children swallow the postnasal discharge and do not expectorate it.

Sneezing is a very common symptom, especially in infants. In acute paranasal sinus disease, fever and leukocytosis are present.

Headache I have not found present until after the age of 5. Paranasal sinus pain is not common.

Cervical adenitis is frequently present. Cellulitis in the orbit or other neighboring structures is sometimes seen.

Very suggestive of chronic paranasal sinus disease is a condition characterized by listlessness, poor appetite, underweight, poor color; in short, the condition commonly caused by diseased tonsils and adenoids. It persists, however, after the removal of the tonsils and adenoids. With a negative report from the pediatrician so far as the systemic condition is concerned, if this condition persists after the removal of the faucial and pharyngeal tonsils, it suggests the presence of paranasal sinus infection.

Perhaps the most common symptom is repeated colds persisting after the removal of tonsils and adenoids. A hypertrophy of the lymph nodes on the posterior pharyngeal wall persisting after the removal of tonsils and adenoids is suggestive.

The diagnosis of paranasal sinus disease in infants and young children is not difficult. One must familiarize oneself with the appearance of the normal nose in this class of cases. Anterior rhinoscopy gives information. The roentgen ray is a most valuable aid; it not only gives information as to whether or not a given sinus, on an anatomic basis, has clinical significance, but it also frequently indicates whether or not it is diseased. The use of the nasopharyngoscope is just as valuable in the infant as in the adult.

The maxillary sinuses in infants can be readily aspirated and their contents examined microscopically and by means of cultures; the sphenoidal sinus may also be aspirated and sounded.

The prognosis as a rule is good. The treatment of this class of patients is very satisfactory.

What I have to say regarding the treatment of paranasal sinus disease in infants and young children applies to the treatment of this condition in Iowa. Our moist, changeable winter climate is a very prolific producer of paranasal sinus infections. It prevents a cure in many cases of chronic sinusitis. Certainly paranasal sinus disease is a different thing in Iowa than in Tucson, Ariz. Patients who do not respond to treatment in Iowa improve as if by magic if they go to Arizona.

In short, the thing that has the greatest bearing on the prognosis in chronic paranasal sinus disease in infants and young children is the ability of the patient to seek a proper climate. Naturally this is the most important thing in the therapy.

The second most important thing in the treatment of paranasal disease in infants and young children is diet. Dr. Amy Daniels, the research dietitian in the department of pediatrics in the University of Iowa, has expressed her opinion regarding this matter as follows:

> We have observed that animals fed diets quite lacking, or very low in the so-called fat soluble vitamin (vitamin A) are subject to paranasal sinus infections, infections of the middle ear, a condition which precedes the eye manifestations, xerophthalmia, characteristic of animals fed diets low in this vitamin. In such animals, the addition of substances, butter fat, cod liver oil, leafy vegetables, etc., which are rich in vitamin A corrects the condition if dietary therapeutics are inaugurated in time. Whether or not the paranasal sinus infections in children are infections superimposed on an undernourished condition, the result of diets low in the fat soluble vitamin, is not clear. It is significant, however, that in general those babies receiving feeding formulas low in fat, carrying from 1 to 1.2 per cent. on the total mixture, have shown signs of mastoid infection, whereas those infants receiving diets carrying a fairly high percentage of available fat, from 2.5 to 3 per cent., have shown no signs of mastoid infection. When a child has a paranasal sinus infection, the diet alone cannot correct the condition. The source of the infection must be removed first and then proper dietary regimen instituted. Excepting for babies, the diet should contain a fairly liberal amount of butter, vegetables, fruits, milk, eggs and cereal foods. So far as possible, all fat given should be supplied in the form of butter or cream. Succulent vegetables, at least two servings a day, and fruits, especially orange juice, should be used freely, since these furnish the antineuritic vitamin necessary for appetite stimulation. The amount of carbohydrate foods should be limited, for there is a tendency to the use of too much bread, potatoes and cereal in the diets of most children. To make sure that there is a liberal amount of the fat vitamin being supplied, cod liver oil once or twice a day is also given. In cases of this sort it is essential to see that the diet prescribed is taken. Children have food prejudices and frequently choose those foods, more especially the carbohydrates, to which they are accustomed.

Dr. George Smith, the assistant professor of bacteriology in the Yale University School of Medicine, working with Dr. Isabel Wason, has come to the conclusion that there is in deficiently fed animals definite evidence of a disturbance in antibody formation, that is, bactericidal substances and opsonins. They feel that these changes are indirect, being dependent on a modified cellular activity induced by failure to provide a proper regimen.

Dr. Lambert, professor of pathology in the Yale University School of Medicine, working with Dr. Judkin, came to the conclusion that the experimental xerophthalmia produced in rats fed on diet deficient in fat soluble vitamin A are essentially inflammatory and are obviously bacterial in origin. His idea is that such animals by a faulty diet are rendered particularly susceptible to infection. He further says that it is interesting and difficult to understand why the infection should involve certain tissues particularly, such as the conjunctiva, and, as we have found in Iowa, the paranasal sinuses. He also says there may be other infections which have been overlooked. He further calls our attention to the fact that on a different kind of deficient diet which Dr. Underhill has employed in dogs in an effort to reproduce pellagra experimentally, a very different infection, namely, a widespread and severe stomatitis and pharyngitis, is brought about, all of which, Dr. Lambert feels, points to a possible relation between diet and infection.

In calling attention to these matters, I do not wish to give the impression that, because at Iowa it has been found that rats fed on a defective diet, one deficient in fat soluble vitamin A, developed in every case an infection of the paranasal sinuses and that this infection has not been found in any normal rat or in any rat fed on a diet deficient in calcium when experimental rickets has been produced, it is the absence of the fat soluble vitamin A in foods which is responsible for the presence of paranasal sinus infection in infants and young children. I do feel, however, that all the observations I have cited suggest that errors in diet play a most important part in causing paranasal sinus infection in this class of cases, and that correction of errors of diet is a most important therapeutic agent. I have taken half a dozen cases of chronic paranasal sinus disease in infants and young children from 3 to 7 years of age, and after doing everything I could from the rhinologic standpoint have turned them over to Dr. Daniels for feeding, with a most remarkable improvement, not only in the paranasal sinus disease but also in the outlook of the patient. These patients remained in our ward under the same conditions that had previously existed, and the same treatment was continued. The only difference was the change in diet.

In addition to climate and diet, proper hygienic conditions as to dress, footwear and the living and sleeping rooms is of importance.

Certainly in acute paranasal sinus disease in infants and young children, bed rest, diet, ventilation of the room and sunlight are the essential things in its treatment. This, with a hot nasal irrigation followed by dropping into the nose some penetrating antiseptic, such as protargin mild or mercurochrome-220 soluble, with perhaps suction treatment, is all that is usually necessary.

In every case of chronic nasal sinusitis, diseased tonsils and adenoids, if present, must be removed. In one baby, aged 18 months, with a posterior cleft after the removal of adenoids, the most persistent treatment for two months would not obliterate a hemolytic streptococcic sinus disease. The tonsils were diseased. It was considered inadvisable to remove these before closing the posterior cleft because of the contraction of the pillars of the fauces. As the cleft could not be closed until the sinus disease was cured, the tonsils were finally removed. Following their removal, the nasal sinus disease rapidly disappeared and the posterior cleft was readily closed.

Eighty per cent. of our chronic cases of nasal sinus disease in infants and young children have been cured by the removal of tonsils and adenoids without any other treatment. These favorable results, I feel, are due in great part to, first, the age of the patient, excluding long chronicity; and, secondly, the comparative infrequency of nasal obstructive lesions in this class of cases. While nasal obstructive lesions in infancy and early childhood are not common, they sometimes are present and are important etiologic factors in the production of the sinus disease. In such instances, this condition must be corrected if the work can be done without interfering with the development of the nose.

The local treatment of chronic suppuration of the paranasal sinuses in this class of cases consists of nasal irrigation, suction treatments and the use of protargin mild or some similar drug. An alkaline solution as hot as can be comfortably borne should be used. The container should not be more than 18 inches above the head, and the patient should lie on a table face downward and with the head lowered over the end of the table. The fluid is lowered into one nostril and flows freely from the other without coming in contact with the pharyngeal opening of the tube. The protargin mild may be introduced in the nares by using an eyedropper. This form of treatment should be continued only for a few days.

In chronic maxillary sinusitis it is only sometimes advisable to aspirate the maxillary sinuses and to inject 1 per cent. protargin mild or some similar drug. This is done by passing a very small trocar through the meatal wall into the sinus. A long, blunt needle, to which is attached a Luer syringe, can be inserted into the sinus through the trocar. The sinus is easily aspirated, and the protargin mild is injected.

Rarely is it necessary to make some opening into the antromeatal wall through which the sinus can be daily irrigated. I doubt that it is very necessary to open the maxillary sinus by the buccal route in infants and young children. Only very rarely is it necessary to operate on the ethmoidal and sphenoidal sinuses. They should be operated on only when the sinusitis refuses to yield to persistent energetic treatment and there is a severe local or systemic complication that would justify operating.

With proper meteorological conditions, first of which is sunlight; with proper diet, especially one rich in fats; with the removal of causative factors in the upper respiratory tract, first of which is infected lymphoid tissue in the nasopharynx and the oropharynx; with simple nasal treatment and perhaps antrum puncture—an apparent cure of almost all cases of paranasal sinus suppuration in infants and young children can be secured.

ABSTRACT OF DISCUSSION

Dr. John J. Shea, Memphis, Tenn.: The end-results of sinus surgery in children compare favorably with those obtained in adults. The initial improvement is generally gratifying, but the attainment of permanent relief is difficult, for the disease tends to be progressive and may be based on an inherited weakness. Radical surgery on the paranasal sinuses of children is seldom necessary, and when instituted requires protracted postoperative care the same as radical mastoid surgery on the growing ear. In both instances the radical element is overcome by the further growth of the sinus or the mastoid process. In the past we have been taught to believe that any surgical intervention would stop the growth and the development of the external nose and the paranasal sinuses. This, I believe, is an error. Disease will arrest the development of the sinuses, but by reestablishing the normal ventilation and drainage of the undeveloped sinuses through surgery they will begin to grow again and in many instances regain the lost development. In fact, it has been our experience that the sinuses must show new growth before the pathologic condition can be considered corrected. No damage to growth and development of teeth has been found to follow intranasal drainage of the antrums, but the time has been too short to determine its influence later in life on the teeth. My technic is as follows: An antrum trocar knife is inserted under the inferior turbinate, and the nasal wall of the antrum is pierced in such a manner that the point of the knife will be directed upward and outward. This reduces the possibility of any damage to the external wall of the antrum, and the height of the sinus is sufficient to insure against injury to the floor of the orbit. It is important to resect the window as far posteriorly as possible, as this insures a more permanent opening and can be accomplished by having the back of the blade serrated and using it as a saw. With a rasp, the anterior end of the window is sufficiently enlarged to allow the insertion of a rubber catheter. The catheter is introduced into the antrum over a trocar, and when it is in place the trocar is slipped out, leaving the tube protruding from the window into the vestibule of the nose. The tube is then trimmed to fit into the ventricle of the vestibule, which will prevent it from being lost.

Dr. Thomas E. Carmody, Denver: We have found, as Dr. Dean has brought out, that silvol gives relief in many cases. We have also found that children with cleft palate are more prone to be infected than normal children.

Dr. Robert F. Ridpath, Philadelphia: Dr. Dean has unquestionably had more experience with sinusitis in children than the majority of us who work in this particular line. There is no doubt also that there is more infection or empyema of the sinuses in children in the Mississippi Valley than we have found around Philadelphia. I say this because Dr. Dean quoted a great many cases, and yet Dr. Skillern and I seldom see sinus disease in children. This, of course, can be attributed to two things: (1) We may not have quite as much sinus infection in children as they have in other places; and (2) we do not recognize it when we see it. Dr. Shea and Dr. Carmody spoke particularly of infection in children, concerned with the antrum or the maxillary sinuses. The sinusitis in children which is more prevalent in Philadelphia than any other is empyema of the ethmoid region. I have had only four cases of maxillary sinusitis or empyema of the antrum of children in the last two years, whereas I have had a number of cases, ten times as many, perhaps, of empyema of the ethmoid region. This is probably due to the infection being unrecognized by the general practitioner, and the disease has gone on to the place where there is fistula formation a little below the inner canthus of the eye. The physician sends the patient to the ophthalmologist thinking it may be a condition of the tear duct, not recognizing that it is an empyema of the ethmoids. To cure this, unfortunately the physician or the ophthalmologist has frequently opened the fistulous formation externally below the inner canthus of the eye. This has produced a more or less permanent fistulous condition, whereas if it had been recognized as an ethmoidal infection the curing of the condition would be a matter of internasal technic; i. e., retraction of the middle turbinate and drainage of the ethmoid cells.

Dr. Joseph H. Abraham, New York: Dr. Dean spoke about diet. I have been interested in the subject for years and should like to ask him in reference to acetonuria complicating sinus cases. I have markedly improved and, in the majority of cases, cured patients of acetonuria before undertaking operative procedures. These cases are treated by proper diet, high colonic irrigation with a 2 per cent. sodium bicarbonate solution, and the internal administration of sodium bicarbonate. As to climatic conditions, I am glad the author said that this should be a hospital operation. I do not like to operate on these patients during the early winter months if I can help it, owing to the fact that ordinarily the temperature of the hospital is about 70 F. when the outside temperature is 50 or 60 F., or lower. Allowing a patient to leave the warm temperature for the cold produces a marked contraction or dilatation of the blood vessels supplying the mucous membrane, producing a mild stimulation with an increased flow of mucus, which retards the healing process. Therefore, these children should be kept as warm as possible while operative procedures and local medications are being employed. When the acute stage and the reaction subside, these patients can come to the office for treatment. I have been experimenting with dyes in the treatment of accessory sinus disease for three or four years. I have discarded protargin mild and preparations of that kind in favor of the dyes. I use a 1:250 solution of acriviolet injected into the sinuses, allowing it to remain for two days. This has a wonderful bacteriostatic action. I feel that Dr. Dean should observe his bacteriologic work on the secretions from the sinuses before and after the dye has been applied. Usually it is impossible to obtain cultures of any bacteria in the pus after three or four injections of the dye. It may be necessary, after dyes have been used four or five, maybe ten, times, to resort to the use of some astringent preparation. I prefer silver nitrate in these cases. In regard to the roentgen ray, I should like to hear a report on the chest findings in these cases. I think you will be astonished to find marked mediastinal glandular enlargement and infiltration of the bronchioles. I was also much impressed with the bacterial cultures from these pus cases, and my findings in almost every case were *Streptococcus hemolyticus*, and in the rheumatic cases *Streptococcus viridans*, and in a few cases *Staphylococcus aureus*.

Dr. H. I. Lillie, Rochester, Minn.: The experience we have had in the Northwest with these cases is about the same as Dr. Dean's. The important point he brings out is that 98 per cent. of the patients get well with treatment. In the winter these children live inside, in a very dry temperature, and then they are taken outdoors for an airing. This results in a tremendous shock to the nasal mucous membrane, producing what might be called a simple inflammation, on which can be superimposed a pyogenic infection, resulting in suppurative rhinitis, and involvement of the paranasal sinuses. This can be controlled by improving the living conditions. In most homes not enough attention is paid to the relative humidity, and it has been generally thought conducive to the good health of children to have them sleep in a cold room; but those who have seen upper and lower respiratory infections in children know that these children do better in a warm, moist temperature. If more attention were paid to that factor, we would, perhaps, have less paranasal and upper respiratory infections than we do. The treatment as carried on by Dr. Dean has been found very satisfactory. In a sense, it is a hospital treatment, but it can be carried out in the office, particularly if the living conditions of the children can be controlled. In eliciting the history from parents, we frequently find that these children past the infant stage are peculiar about their diet. They are faddy and avoid eating fats. They will pick off the fat from their meat and they do not like butter. In a small number, merely by changing the diet and making them eat a balanced ration, great improvement has taken place.

Dr. Sidney Israel, Houston, Texas: I cannot agree with Dr. Dean as to the value of the roentgen ray in the diagnosis of these sinus conditions. It has been my observation that the majority of men who are doing roentgen-ray work have little interest in sinus roentgenograms, and the technic consists in merely placing the patient's head on the table and making an exposure. We know that it requires more than that to get an accurate outline of the sinuses, so far as the determination of pathologic changes are concerned. We have carried out extensive observations and feel that if roentgenologists would pay more attention to the requirements of roentgen-ray study of the sinuses the roentgen ray would be of more value. We have also maintained that the rhinologists should be in position to interpret roentgenograms satisfactorily. In taking a picture of the sinuses, particularly the maxillary antrums, there is one large factor to be considered, and that is that the petrous portion of the temporal bone really overshadows the antrum and often gives rise to a diagnosis of maxillary sinus disease. In the proper position, with the chin and nose on the plate, and the forehead off the plate, we get a beautiful picture of the maxillary sinuses with no overlapping of the petrous portion of the temporal bone. With the proper picture we usually get a true anatomic outline of the sinuses and the contents. In disease of the sinuses, there is a typical fuzziness wherever a pathologic condition is present.

Dr. Lee W. Dean, Iowa City: Dr. Abraham brought out an excellent point with regard to the use of dyes. The diet mentioned by Dr. Lillie is the most important item in treatment. With infants and young children it is not only necessary to prescribe the proper diet, but they must be watched and fed carefully in order to see that they take the diet that is ordered.

New Hazards for Old.—Mercury poisoning was formerly a great hazard of the mirror industry. The silvering of mirrors today is done largely with silver nitrate instead of with mercury amalgam. According to the *New York Industrial Hygiene Bulletin*, workers have found that sodium cyanid will remove from their hands the black discoloration caused by the nitrate, and, with little thought of danger, rub lumps of cyanid on their hands. Serious accidents may thus occur. If the hands are not well cleansed, sodium cyanid may remain on the skin, and, when food is handled thoughtlessly, find its way into the mouth.

PROLAPSE OF IRIS AFTER CATARACT EXTRACTION *

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Prolapse of the iris as a postoperative complication of cataract extraction usually is considered serious. The chief danger, as expressed by numerous authorities, is the liability of an eye in which it is present to become affected with inflammation of the uveal tract, weeks, months or years after the healing of the wound. It is quite probable that the danger is overestimated, as every operator of considerable experience will testify; and yet the fact that the condition does occur, and that it offers even a minimum amount of danger, should prompt us to adopt those measures most likely to avert it, and give it proper attention when it does occur.

There can be little doubt that the rather general tendency on the part of nearly all operators to do the combined operation has lessened the number of cases of postoperative iris prolapse, especially when a generous conjunctival flap has been secured and appropriate effort has been made to replace the iris and free the angles of the wound of tags of iris tissue. There also is the added protection afforded by the substitution of lid retractors for the speculum, the paralyzation of the lid muscles by procain injections, recently popularized, and the avoidance of unnecessary and meddlesome early inspection and dressing of operated eyes.

The advantages of an iridectomy are that it not only facilitates the extraction of the lens, but reduces the aqueous current, which tends to carry the iris between the lips of the wound where it is apt to become incarcerated.

A generous conjunctival flap hastens closure of the wound, thus tending to prevent infection as well as subsequent prolapse of the iris; but in the event of a small prolapse brought about through trauma occasioned by untoward action of the patient or careless handling at the first dressing, the action of the flap has a tendency to cause the iris to return to the anterior chamber. Payne[1] reports three cases of iris prolapse under a conjunctival flap in which the iris returned to the anterior chamber, two within two weeks, while the third showed no signs of returning at the end of six weeks; but, when seen a week or two later, it had returned to the anterior chamber. His explanation of this is that the iris does not bunch up under the conjunctiva, but instead lies out flat and has no union with the cornea or conjunctiva. The iris cannot reach to the top of the flap, which heals above and around it, and the space that contains it is practically a part of the anterior chamber. Without a conjunctival flap the iris would be bunched up in a hernia form, and a union of the cornea around this hernia chokes it off so that it cannot return to the anterior chamber.

Paralysis of the orbicularis by procain injections also plays an important part in the prevention of iris prolapse, for it prevents squeezing of the lids during the operation and for a considerable time afterward, while the wound edges are becoming more effectually sealed.

Probably a very large percentage of the cases of postoperative iris prolapse occur during the first twenty-four hours, and the precautions mentioned will aid in averting such a complication; but there is another all important factor in the causation of the condition, and that is the injudicious and unnecessary first inspection and dressing at the end of the twenty-four hour period, a practice very generally followed but which is a common cause of disaster. Some untoward action on the part of the patient, or the pressure on the eyeball occasioned by the effort to look down at the command of the attending surgeon, is often all that is required to change a freshly sealed wound and a promise of a good result into a reopened wound with iris prolapse.

It is inexcusable curiosity that leads to inspection of the cataract wound at the end of twenty-four hours. If the appearance of the eye was satisfactory at the completion of the operation, and the subsequent twenty-four hours have been uneventful and the eye comfortable, then why remove the dressings until three, four or even five days have elapsed? Certainly if anything unfavorable has happened there will be some warning, and without that warning an inspection and dressing of the wound at twenty-four hours is nothing short of meddlesome. An infected eye usually gives warning through pain or discomfort, and certainly will offer evidence of the infection as soon as the eye is opened. If prolapse of the iris has occurred, nothing would be gained by looking at it; for if the eye is quiet and there is no pain, the prolapse should be let alone, temporarily anyway, and any effort to inspect the wound probably would result in opening the wound wider and lead to an increase in the size of the prolapse. However, if curiosity cannot be controlled, or if there really appears to be good reason for inspecting the eye at the end of twenty-four hours, then the examination should be made from in front, the upper lid should be raised very gently by traction on the bony orbital rim, and the patient should not be asked to look down.

Incarceration of small folds or tags of iris in the corneal wound, without true prolapse, is, as pointed out by Roemer-Foster,[2] of very frequent occurrence, despite the most painstaking efforts to free the wound of all iris tissue. In nearly all these cases the amount of tissue incarcerated is not sufficient to interfere with satisfactory healing, even though the wound may remain irritable a little longer than normal, and, as a general rule, a firm scar results. This, as pointed out by Killick[3] and other observers, generally speaking, does not constitute a danger to the future well-being of the eyes. In fact, Parsons,[4] in his work on ocular pathology, states that fragments or tags of iris that heal in a wound undergo atrophy and show little tendency to cause inflammatory reaction, and most operators of experience can corroborate the statement. On the other hand, both de Schweinitz[5] and Wood[6] are of the opinion that entanglement of the edge of the cut iris in the angle of the wound in combined cataract extraction may be the determining cause of glaucoma. A case of that kind in my own practice, more than twenty years ago, seems to bear out the

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[1] Payne, S. M.: New York M. J. **115:** 466 (April 19) 1922.

[2] Roemer-Foster: Textbook of Ophthalmology, Ed. 2, p. 237.

[3] Killick: Tr. Ophth. Soc. U. K., **34.**

[4] Parsons, J. H.: Pathology of the Eye, New York, G. P. Putnam's Sons **1:** 160, 1908.

[5] De Schweinitz, G. E.: Diseases of the Eye, Ed. 10, Philadelphia, W. B. Saunders Company, p. 777.

[6] Wood, C. A.: System of Ophthalmic Operation, Chicago, Cleveland Press **1:** 771-985.

opinion that the condition is not entirely as innocent as is believed by the authorities quoted, and yet an unfortunate after-result is not common.

Protrusion of the iris between the lips of the wound so as to form a true prolapse is of more importance, and forms a real complication, because the prolapse interferes with the healing of the wound and lays the whole uveal tract open to infection, which may not only destroy the eye that has been operated on but also may lead to sympathetic inflammation of its fellow. The extent of the prolapse, whether covered by a conjunctival flap or not, and the length of time that it has existed, are determining factors in the treatment to be adopted. A prolapse discovered at the first dressing, from one to four days after operation, no matter as to size, may be let alone with safety if it is completely covered by a large conjunctival flap. Such a prolapse may reduce itself within the succeeding week or two, and if not may be operated on later, though even if left to nature the result is rarely anything but favorable, as the tendency is toward a considerable reduction in the prolapse and the early atrophy of the iris; closure of the wound by scar tissue covered by a protecting layer of conjunctiva generally insures a quiet eye for all time. A number of such cases, in my own practice as well as in the practice of others, some of years' standing, have come under my observation. This course seems preferable to one requiring the reopening of the wound and excision of the prolapsed iris.

On the other hand, a prolapse of the iris not covered by a conjunctival flap, discovered from one to four days after operation, should be treated by excision. Attempts to replace it should be avoided on account of the risk of infection of the interior of the eye, and for the further reason that a replaced prolapse of that type is very apt to prolapse again. In my own opinion there are advantages in postponing the excision operation until the fourth or even the fifth or sixth day, in order to take advantage of a firmer healing of the wound outside the area involved in the prolapse. As Duane[7] well says, "prolapses four or five days old can be excised as well and as completely as those just formed." The inflammatory exudate at this stage will not be found to have firmly sealed the prolapse to the edges of the wound, and careful and complete freeing of the prolapse with a bent iris spatula is possible, after which it may be excised with iris scissors and then covered with the original conjunctival flap. The difficulties attending this operation are confined mostly to the overcoming of the irritability and sensitiveness of the eyeball. In extremely nervous patients a general anesthetic may be required; but usually the operation may be accomplished under local anesthesia produced by the free use of a sterile 5 per cent. solution of cocain to which 20 per cent. of epinephrin solution has been added, followed by careful subconjunctival injections of 2 per cent. procain through a fine and sharp pointed needle, and lastly the application of a crystal of pure cocain to the operative field a few minutes before operating. A hypodermic injection of morphin, one-eighth grain (8 mg.), and scopolamin, one two-hundredth grain (0.3 mg.), one-half hour before the operation, not only helps to produce tranquility for the patient but is an adjunct in the production of local anesthesia. The lid elevators should be used in place of the speculum, with a view to averting any sudden squeezing of the lids on the part of the patient, and no fixation forceps should be used. A conjunctival flap, of whatever size, should be preserved by turning it over the cornea before the prolapse is excised.

If the wound is entirely within the cornea, special attention should be devoted to the freeing of the lips of the wound of all tags of iris. This usually is best accomplished by the use of the iris spatula, after which the tags can be drawn out with fine curved iris forceps and excised. Subsequently the edges of the wound, both above and below, may be freshened by gentle scraping with a narrow bladed, sharp pointed canaliculus knife, the blade of which is bent at an obtuse angle. While it is possible for such wounds to heal promptly and firmly, there can be no doubt concerning the added protection afforded by a conjunctival flap after the manner of Kuhnt, and such a procedure is recommended. Before the eye is closed, a drop of 5 per cent. aqueous solution of mercurochrome-220 soluble may be instilled, followed by a free application of White's ointment. Rest in bed and the use of ice cold, moist compresses over the eye are decidedly beneficial in promoting healing.

In those cases in which an enormous prolapse occupies nearly the whole of the wound, Herbert[8] recommends excising only or mainly the part of the iris uncovered by the conjunctival flap, and says that the remainder tends to flatten down well if it does not retract altogether from the incision, which latter conclusion corresponds with that of Payne[1] that prolapse of the iris, if completely covered by the conjunctival flap, nearly always reduces itself.

A postoperative prolapse of the iris that is not given attention during the first five or six days should not be disturbed until later or until the wound outside the area affected by the prolapse has healed firmly. Not a few of these cases will develop a cystoid cicatrix; and even though such an eyeball may be free from congestion and reasonably free from tenderness to touch for a long period, there is ever the possibility that it may at any time become the seat of either a mild or a severe uveal disturbance, or even the introduction of infection that will result in prompt destruction of the eyeball. Wagenmann[9] has recorded the results of the microscopic examination of eleven eyeballs affected in that way. In all, micrococci were found in the interior of the eye. The suppurative process appeared in all the cases to have started from the cicatrix, with the condition as one of new infection through the cicatrix, and not due to micrococci having entered the wound before it was healed and then remaining for a long time inert, or as due to organisms brought to the wound by the circulation and there finding a congenial soil.

Some of the cases of postoperative prolapse of the iris never do quiet down, but the eyeball remains congested and sensitive to light and touch until given appropriate attention. Quiet cases, even though the prolapse may be extensive, offer the least difficulties, for local anesthesia, in the manner already described, is quite sufficient for the operative work deemed necessary. Those attended with mild congestion, photophobia and marked tenderness to touch are the ones that require general anesthesia. In practically all these cases the prolapsed iris will be found not covered with a conjunctival flap. If the condition has existed beyond the eight day period, when adhesions are supposed to have formed, and the prolapse is firmly fixed between the lips of the wound, the separation of the atrophic and friable iris is a more difficult matter, but can be accomplished with the aid of the narrow short bladed and sharp canaliculus knife bent at an obtuse angle. All portions of iris tissue should be scraped away carefully and the wound covered by a Kuhnt's conjunctival flap previously dissected up. In two cases of this character in which operation was performed more than a month after the extraction, the results were very satisfactory. But little difficulty was encountered in freeing the wound of the friable iris tissue by scraping the wound edges; the conjunctival flap brought about a very good scar, and, so far as is known, the eyes have been quiet up to this time. If the iris tissue is firmly fixed in the wound and difficulty is encountered in freeing it, we may content ourselves with a radical excision, without opening the original wound, and covering the site with a conjunctival flap.

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[7] Duane: Duane-Fuchs Textbook of Ophthalmology, p. 541.

[8] Herbert: Tr. Ophth. Soc. U. K., 34.

[9] Wagenmann, quoted from Roemer-Foster, p. 238.

The use of the cautery for the removal of cystoid cicatrices as well as small knuckles of iris tissue has been recommended by numerous operators, but, as is pointed out by Landolt,[10] Collins,[11] Herbert,[8] Gifford[12] and others, the resulting firm, smooth scar does not insure against infection at any time in the life of the patient. Thus, Herbert[8] reports two late infections following cautery, and Gifford[12] reports seven other cases from the literature. Landolt,[10] Herbert,[8] Ramsay[13] and Gifford[12] are emphatic in their expressed opinion that if the actual cautery is employed to reduce cystoid cicatrices, or small prolapses of the iris, the cautery wound should be covered with a Kuhnt conjunctival flap. My own preference is the excision operation already described, supplemented by the Kuhnt conjunctival flap; though I confess that several years ago I used the actual cautery in a few cases of cystoid cicatrix or to reduce small beads of iris prolapse, did not cover the wound with a conjunctival flap, and secured very satisfactory and lasting results. After learning of the disastrous sequelae that sometimes follow cauterization of iris tissue, I abandoned the practice.

SUMMARY

1. Postoperative prolapse of the iris is less likely to occur in those cases in which the combined operation has been performed; in which a large conjunctival flap has been made, and in which the wound has not been submitted to unnecessary and meddlesome early inspection and dressing with its attendant dangers.

2. Prolapse of the iris after cataract extraction can be given appropriate attention safely and effectively from five to six days after its development, and such a delay offers the advantage of a firmer healing of the wound outside the area involved in the prolapse.

3. A postoperative prolapse of the iris, well covered by a conjunctival flap, requires no immediate attention, as in the large proportion of cases it will correct itself; and even if a small proportion of iris should heal between the lips of the wound, it flattens out and is covered by the protective conjunctival flap, which makes the eye relatively safe from infection.

4. An iris prolapse, whether large or small, not covered by a conjunctival flap, is best treated by excision after freeing the iris tissue from the lips of the wound, after which the wound should be covered with a Kuhnt conjunctival flap previously prepared. This is best done from five to six days after the development of the prolapse, or before the adhesive inflammation has firmly fixed the iris tissue in position.

5. A prolapse of the iris that has existed for a considerable time should be treated by excision, and the wound covered by a Kuhnt conjunctival flap. This applies to a large as well as a small prolapse, though the latter occasionally will present a smooth, flat cicatrix following excision alone, though as a routine practice this is not recommended.

6. Cystoid scars and small beads of prolapsed iris may be reduced with the actual cautery, but the wound always should be covered with a Kuhnt conjunctival flap. Generally speaking, the actual cautery in the treatment of any form of incarcerated or prolapsed iris is not recommended.

7. In nearly all cases of postoperative prolapse of the iris, operation can be done safely and efficiently under local anesthesia produced with four applications of a 5 per cent. solution of cocain to which 20 per cent. of epinephrin solution has been added, instilled at four minute intervals, supplemented by subconjunctival injections of 2 per cent. procain, and a preliminary hypodermic of morphin one-eighth grain (8 mg.), and scopolamin one two-hundredth grain (0.3 mg.), one-half hour before operating. A crystal of cocain on the prolapsed iris prior to excision increases the profoundness of the anesthesia. If the eye is irritable and very tender to touch, general anesthesia is preferable.

8. Previous to operation for prolapsed iris, the eyeball should receive antiseptic treatment with 50 per cent. solution protargin mild, or 5 per cent. aqueous solution of mercurochrome-220 soluble, and the operative field thoroughly douched prior to operation. Five per cent. aqueous solution of mercurochrome followed by White's ointment should be applied to the eyeball before the wound is closed. Rest in bed and ice cold compresses aid in healing. Of importance also is the avoidance of fixation forceps, the use of lid elevators instead of the speculum, and keeping the lids away from the operative field until not only the operation has been completed but also the antiseptics have been applied to the eyeball.

ABSTRACT OF DISCUSSION

Dr. W. H. Wilder, Chicago: One of the most important items in the preparation of a patient for cataract operation is the production of perfect anesthesia and the control of the lid and eye muscles so that the operator may make a satisfactory incision, with a suitable conjunctival flap, a clean, smooth iridectomy, and extraction without undue force, and a proper replacement of the pillars of the coloboma by irrigation and spatula without the fear that the patient, feeling pain, will squeeze the eyelids and so cause disaster. Such anesthesia can be secured by dropping a 4 or 5 per cent. solution of cocain into the conjunctival sac, five or six times, at intervals of two or three minutes, and deep injection into the orbit around the ophthalmic ganglion of 1 or 1.5 c.c. of 2 per cent. procain solution. For this deep injection a slender needle, 3.2 cm. in length, is preferable. It may be passed through the lower lid just over the inferior temporal margin of the bony orbit directly backward until the point has passed behind the curve of the eyeball and then directed slightly inward and upward toward the ganglion. The injection may also partially block some of the members of the muscle cone, usually the inferior rectus. The orbicularis may be blocked very effectually after the method of Van Lint by injecting 2 per cent. procain solution along the inferior and temporal margins of the orbit, with also a few drops above and below the inner canthal ligament. By such measures, carefully applied, I have found attempts at squeezing of the eyelids reduced to a minimum, making it possible for the operator to do his work with more assurance and thoroughness. Coughing, sneezing, straining from vomiting or from bowel movements, unnecessary movements in bed, discomfort from too tight or ill placed dressing or bandage, are frequent causes of partial or complete prolapse of the iris, even in cases that were left in excellent condition at the end of the operation. Of course, a good conjunctival flap properly replaced goes far to insure against such accidents or to minimize the prolapse. If the patient has a severe cough, the operation had better be deferred, if possible, until the cough is relieved. Sneezing frequently can be avoided by preventing drafts from striking the patient, especially in bald headed subjects. It is my practice to prepare the patient with a free cathartic the night before operation and a bowel flushing on the morning of the operation day just as for a general anesthetic, so that he may not have a bowel movement for two or three days. For the same reason, the patient is given a light diet for a couple of days after the operation. I am quite in accord with the author on the methods of treating the prolapse if it occurs. To attempt to replace it or to operate on it before the rest of the wound has been securely healed is, in my opinion, very hazardous and may result in disaster. I agree with him also as to the importance of the use of a conjunctival flap to cover the site of the prolapsed iris after this has been released so far as possible and properly excised.

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[10] Landolt: Tr. Ophth. Soc. U. K., **34**.

[11] Collins: Tr. Ophth. Soc. U. K., **34**.

[12] Gifford, Harold: The Danger of Sympathetic Ophthalmia from the Use of the Cautery in Treating Iris Prolapse, J. A. M. A. **55**: 386 (July 30) 1910.

[13] Ramsay, A. M.: Brit. J. Ophth. **2**: 554 (Nov.) 1918.

Dr. S. Lewis Ziegler, Philadelphia: The greatest factor in causing iris prolapse after extraction is an irregular corneal incision. Where there is a smooth, even bevel of the corneal wound it is practically impossible to cause the iris to prolapse, unless direct traumatism is involved, without rupture of the conjunctiva. In the days when simple extraction was more popular, a large conjunctival flap usually encouraged an early closure of the wound; but occasionally the cornea would break open and the iris become herniated between the lips of the corneal wound. When marked prolapse occurred, it was considered quite necessary to reduce the hernia thoroughly with the iris spatula, and if persistent to excise a section large enough to free the angles and to prevent a recurrence of the prolapse. This is absolutely essential and, of course, is much easier to accomplish now that we have regional anesthesia to aid in a painless excision. I cannot agree with the author as to the danger of daily postoperative inspection. The patient who "howls the loudest" from pain is probably suffering from a simple retention of tears, while the patient whose eye is rapidly disintegrating from suppuration or iridochoroiditis, with open wound, may not "utter a whimper." Dr. Bulson is skilful enough to avoid the possible disaster that he describes. Others should train themselves not to rupture a fresh wound. If I cannot visit a patient recently operated on on the first day, I send an experienced nurse to examine the eye and make a report. If I can make a visit later in the same day I do so. That makes two examinations on the first day. Daily postoperative examination is a rule that I have always insisted on. The technic of covering an old prolapse that is not incarcerated or pinched with a Kuhnt conjunctival flap is good surgery. The danger of infecting a thin iris hernia is always present. Puncture of the prolapse with the galvanocautery may prove effective if the puncture is made by a quick thrust, but it should be watched carefully, as the possibility of danger cannot always be eliminated. The injection of scopolamin and morphin is most useful. I would suggest the addition of philocarpin nitrate, one-tenth grain (6.5 mg.), to this combination, since it neutralizes some of the bad effects of the other drugs.

Dr. Allen Greenwood, Boston: I have the highest regard for Dr. Ziegler's opinion, but at this moment I am going to disagree with him in regard to the early examination of the eyes after cataract extraction. I well remember the remarks of one of the older physicians at a meeting when I was a young ophthalmologist, about "peeping Toms." He deprecated them very much indeed. I have never seen any bad results that I could have helped when I had failed to examine an eye for forty-eight hours, which is my custom. I am sure I have never seen bad results that I could have prevented by looking at the eye twenty-four hours earlier, and I feel strongly that Dr. Bulson is right when he says that unless there is some definite indication for opening the eye it is better not to for at least forty-eight hours. Sometimes I go even further and leave the eye alone a longer time.

Dr. Albert E. Bulson, Jr., Fort Wayne: Dr. Greenwood has answered the objection raised by Dr. Ziegler. I am quite in accord with what Dr. Greenwood has said concerning what we might call meddlesome inspection of cataract cases. I have never seen a complication following a cataract extraction that could have been avoided by earlier inspection of the eye. I sometimes do not inspect cataract cases for from seventy-two to ninety-six hours after operation. I am firmly convinced that if anything is happening that I ought to see there will be some warning of it, and some indication for inspection of the eye. I have seen numerous instances of complication that I am satisfied were due to early inspection, and some of them occurred in the early years of my own practice and some in the practice of my confrères.

ANAPHYLACTIC SHOCK AND FAILURE OF DENSENSITIZATION

AFTER ADMINISTRATION OF PNEUMOCOCCUS TYPE 1 SERUM [*]

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This case record is presented to display three unusual phenomena: 1. The patient developed fatal septicemia after surviving lobar pneumonia terminating in crisis by the aid of antiserum. 2. He became extremely sensitive in nineteen days after serum treatment, but the sensitization was not discernible by skin test. 3. Desensitization failed.

It is generally supposed that Rockefeller Type 1 serum will successfully and uniformly render the blood stream free from Type 1 organisms if given early in the disease or when septicemia has not yet developed. The lowest mortality rate occurs in Type 1 pneumonia in which blood cultures are sterile and serum is given. However, Lock [1] has recently reported four fatal cases of endocarditis similar to the one here recorded, three of which were treated with serum with no apparent effect. Palmer [2] has reported two such cases, and Bloomfield,[3] one. Camac [4] has reported instances in which sensitization could not be discovered by skin tests. But so far we have not seen the report of a case in which the prescribed method of desensitization has failed.

REPORT OF CASE

A Hungarian, aged 30, was admitted to Lakeside Hospital after three days of illness at home, suffering from obvious lobar pneumonia in the right upper lobe. A previous admission two years before had disclosed a chronic rheumatic valvular heart disease with aortic insufficiency, but at that time he was well compensated and was successfully operated on for hydrocele. On the second admission, the temperature was 40, pulse 100, and respirations 28. The white blood count was 9,800. The patient was very cyanotic and dyspneic on account of pleurisy; there was a large amount of very bloody sputum, and he was much troubled by cough. The abdomen was much distended, and on account of his general appearance and his heart complication, he was considered to be in grave danger.

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[*] From the Medical Department, Western Reserve University and Lakeside Hospital.

[1] Lock, E. O.: Pneumococcus Endocarditis, Boston M. & S. J. **191**: 913-926 (Nov. 13) 1924.

[2] Palmer, W. W.: Pneumococcus Endocarditis, M. Clin. N. Am. **2**: 987 (Jan.) 1919.

[3] Bloomfield, A. L.: Therapeutic Value of Antipneumococcus Serum, J. A. M. A. **81**: 1437-1438 (Oct. 27) 1923.

[4] Camac, C. N. B.: Antipneumococcus Serum in Lobar Pneumonia, Am. J. M. Sc. **116**: 539-544 (Oct.) 1923.

His temperature remained in the neighborhood of 40 until the fourth day of his stay in the hospital, which was the seventh day of the disease, when it dropped abruptly below 38, with an accompanying drop from a pulse of 135 to 70, and a corresponding change in respirations in the nature of a crisis. In the meantime, his organism had been isolated and identified by the mouse method, and he was given intravenously three daily doses of 100 c.c. of antipneumococcus serum. These were given on the fifth, sixth and seventh days of the disease. There was absolutely no reaction to the treatment, unless the crisis can be interpreted as the result of the serum, which is doubtful, as the natural crisis was about due. Prior to the administration of the serum, the lung lesion had spread so that the entire right side and much of the left lower lobe were consolidated. Blood cultures, taken prior to the administration of the serum, were sterile, but regardless of this encouraging fact a bad prognosis was made, up to the very time of crisis.

The leukocyte counts, which were alarmingly low on admission, had risen to 30,000. After the administration of the first dose of serum, the count was 37,000, and after the second, it was 40,000. For four days following the crisis, the patient's temperature averaged about 38, pulse 80, and respirations about 30. The temperature then began to rise by successive stages, and on the sixth day had gone above 40, with a daily variation of 1.5 degrees C. This high temperature continued throughout the remainder of his thirty days' stay in the hospital. This unusually high fever was not accompanied by any alarming symptoms, and was associated with a leukocytosis varying from 15,000 to 40,000. As the result of a complexity of lung signs and roentgenograms, he was suspected of empyema and on one occasion was needled. Blood recovered from the solid lung showed no growth when a culture was taken.

On the twenty-first day of his disease, or sixteen days after the crisis, another blood culture was made and a large number of pneumococci of Type 1 were found. It was decided at once to give further serum treatment for this complication, and although skin tests were negative, as a matter of precaution the patient was presumably desensitized by small doses of pneumococcus serum given hypodermically at two hour periods. In all, seven doses of serum were thus given, starting with 4 minims (0.24 c.c.) and ending with 5 c.c. At no time was there any local or systemic reaction to the process of desensitization. He was accordingly given serum intravenously; but after 5 c.c. had been introduced carefully, he showed a profound anaphylactic shock, so that the injection was stopped.

In the following twenty-four hour period, desensitization was again attempted with exactly the same method, and another attempt was made to give serum intravenously, but on the second attempt he again had severe anaphylactic shock. After a consultation with Professor Karsner, he was then given two doses of serum each day for the next five days, until he died. The dosage was started at 15 c.c. with the expectation of raising it, but the highest dose he could be given was 25 c.c., which again caused a reaction. This dosage was considered safe, but proved to be wholly inadequate in controlling the infection. Blood cultures repeated after the serum therapy was instituted showed an increasing degree of bacteremia. The second culture showed 476 colonies per cubic centimeter; the third, 521, and the fourth, 592, all of Type 1 pneumococcus. The patient's serum at this time, four days before death, was titrated for agglutinins against his own organism and there was weak agglutination in 1:10 dilutions. The therapeutic serum being used was titrated and found to agglutinate at 1:40 dilutions. But on account of the tremendous shock from any but small doses of serum, it was considered unwise to give an adequate amount of specific serum. In the last days of the disease, the patient developed a tremendous crop of petechiae and a loud systolic and presystolic murmur at the mitral area. Forty-eight hours before death, he was delirious and showed general rigidity. A lumbar puncture, done immediately after death, showed a moderately purulent spinal fluid, cultures of which yielded large numbers of pneumococci of Type 1.

COMMENT

This case presents several unusual features deemed worthy of reporting. First, it is distressing and paradoxical, to say the least, to see a patient that has recovered from lobar pneumonia by crisis, and has furnished sterile cultures from his consolidated lung, go on to die of septicemia and endocarditis caused by the same organism that produced the pneumonia. This contradiction may be somewhat modified by the fact that he had a valvular deformity due to an old rheumatic endocarditis, the site of which might be a point easily infected by a blood-borne infection. It is well known that these deformed valves are commonly the seat of secondary bacterial endocarditis. It would appear that the lungs and bronchi had developed a local immunity to pneumococci, while the heart, valves and blood had not.

Another unusual feature is the very severe sensitization induced within nineteen days by the use of pneumococcus serum. Still more unusual is the fact that he showed no cutaneous evidence of sensitization, and that all efforts by the approved technic were of no avail in desensitizing him so that a specific serum could be given him in adequate doses.

Why desensitization failed, is a question of much importance. When it was referred to Dr. E. E. Ecker of the department of pathology he offered the following discussion:

> The problem of desensitization is not settled. Most of the work done has been on the guinea-pig, an animal that readily responds to desensitization by the use of homologous protein. Besredka has shown that, by the subcutaneous injection of homologous protein, the guinea-pig is desensitized in an average of four hours; by the intraperitoneal and intrathecal route, in from one to two hours; and by the intravenous or intracerebral method, almost instantaneously. The studies of Arthus make it appear that the rabbit and the chicken behave entirely differently. In the rabbit, not only does desensitization fail during ether, chloroform or chloral anesthesia, but a reinjection one hour after the animal has recovered from the induced crisis again causes typical reaction. Similar reactions can be obtained one, two and four days after desensitization with the homologous protein given under anesthesia or without. We have also seen chickens under anaphylactic shock that had survived a shock four days before. A renewed shock can also be obtained in a dog that has resisted a shock produced by the intravenous injection of the specific protein a short time before. If the injection is given over a period of ten to fifteen minutes, a less profound and lasting drop of the blood pressure is obtained. Atropin, morphin and chloroform anesthesia given to a dog before the toxic dose fails to counteract the drop in blood pressure and the incoagulability of the dog's blood.
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> In the case presented, then, not only did sensitization fail, but shock and redesensitization failed to inhibit the reaction. Since small doses of the serum were later injected without apparent effect, it may be construed as a slight degree of desensitization, a phenomenon that is qualitative rather than quantitative in character, as emphasized by Karsner and Ecker. The question of poor absorption does not entirely explain the case, because desensitization was twice attempted over a sufficiently long time and the patient withstood severe shock. Thus it would seem that in some cases the result of attempted desensitization in man may be similar to that in the rabbit, the chicken and, possibly, the dog. How much the state of the patient influenced the case, it is difficult to say.

NEONATAL PYELITIS *

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Although Hüttenbrenner,[1] in 1876, gave an accurate clinical description of pyelitis, this disease received very little attention from pediatricians until Escherich,[2] in 1894, reported seven cases of what he called "colicystitis." Two years later, Finkelstein[3] found pyelitis to be rather frequent in children, and in 1908 Goeppert's[4] monograph on ninety-seven cases appeared. Since then, many publications have dealt with various phases of this disease. Despite the wealth of contributions in recent years, only rarely is neonatal pyelitis referred to. The first two cases were reported in 1901 by Kovalosky and Moro.[5] Goeppert's series includes six infants under 3 months. Von Reuss,[6] in 1914, remarked: "The occurrence of pyelocystitis in the new-born is not frequent; at any rate, our knowledge of it is very defective." Wieland,[7] in 1918, contributed nine cases in infants under 6 months. Finkelstein,[8] in 1924, stated that he had repeatedly diagnosed pyelitis within the first two weeks of life; and Helmholz[9] says: "Pyelitis of the new-born is worthy of special mention because it is more common than is supposed. An unexplained fever occurring in the first two weeks of life may be due to pyelitis."

Findings in Fifteen Cases of Neonatal Pyelitis

Case	Age at Probable Onset, Days	Weight, Pounds	Duration, Weeks	Infecting Organisms	Symptoms (in Order of Occurrence)	Outcome
1. B B	6	9	5	B coli	Vomiting, 100 F, weight loss	Cured
2 H P	7	4½	5	B coli	Vomiting, weight loss, pallor, 101 F.	Cured
3 R J	8	6¼	4	B coli	Weight loss, diarrhea, 101 F.	Cured
4 R G	8	7	11	B enteritidis	Cyanosis, fever, convulsions, meningitis	Died at 12 weeks
5 W B	9	6¾	3	B coli	Vomiting, constipation, 101.8 F.	Cured
6 J C	10	7	5	B coli	Diarrhea, 101 F., no gain	Cured
7. B S	10	8¾	7	B coli	Fever 102.5 F., weight loss, tympanites	Cured
8 A M	11	7¼	5	B coli	Anorexia, weight loss, diarrhea	Cured
9. B Se	15	9¼	4	B. coli	Cyanosis, 104 F., weight loss, diarrhea	Cured
10 J W	16	7	7	B coli	Bloody diarrhea, pallor, weight loss	Cured
11 J T	13	7¼	4	B coli	104 F., vomiting, diarrhea, tympanites	Cured
12. R. C	21	7¼	4	B coli	Cyanosis on 11th day, vomiting, pallor, weight loss, anorexia	Died at 7 weeks; congenital stenosis of right ureter; multiple abscesses of both kidneys; B. coli; septicemia
13 J Wa	24	6¾	12	B coli	104 F, vomiting, tympanites	Cured
14 M K	28	7	3	B coli	Projectile vomiting, weight loss, constipation	Cured
15. M M	28	6¾	8	B coli	Projectile vomiting for 3 weeks; weight loss, constipation	Cured

This brief clinical report on neonatal pyelitis is based on twelve cases seen in private practice in the last few years and on three cases reported in 1918 by Helmholz. It is submitted because: (1) The disease occurs periodically and may be easily overlooked; (2) the early symptoms are invariably referable to the gastro-intestinal tract or to the central nervous system, and (3) its occurrence at such an early age in a preponderance of male infants may shed some light on the route of the infection.

Goeppert, Wieland, Finkelstein and Helmholz found the new-born male more predisposed than the female. Thirteen of our fifteen cases were in boys. For some unknown reason the urinary tract of the young boy offers a more fertile habitat for *B. coli* infections. This organism was found in all but one instance (Case 4). No visible malformation or irregularity of the external genitalia could be detected in any of the patients. In eight, the prepuce was intact and adherent to the glans; in the remaining five, the circumcision had healed. In the last six years, ten young infants with hypospadias were seen—in none was a pyelitis found. In one of the two fatal cases (Case 4), *B. enteritidis* was found in the urine and spinal fluid. The infant died of a meningitis due to this micro-organism. In the other fatal case (Case 12), necropsy revealed: a congenital stenosis of the right ureter near the renal pelvis; suppurative cystitis, ureteritis, pyelitis and nephritis; multiple small abscesses of both kidneys; also an acute, generalized *B. coli* septicemia. This anomaly doubtless played an important rôle in the fatal outcome. The remaining thirteen infants recovered without exacerbations. In none of these did pyuria, nephritis or pyelonephritis persist.

In no instance were there signs or symptoms referable to the urinary tract. The onset was usually rather sudden. Gastro-intestinal symptoms were usually present several days before the diagnosis was made. The ashen pallor and anxious facies, characteristic of pyelitis, were often present within a few days after the onset. Fever was usually present but seldom above 101 F. The course may be stormy (Cases 4, 11, 13, 15) and protracted (Cases 4, 10, 13, 15) despite early diagnosis. The most frequent sequence of symptoms was: anorexia, diarrhea, vomiting (projectile in Cases 14 and 15), tympanites, pallor, anxious facies. Cyanosis was the first marked symptom in Cases 4, 9 and 12. In Case 4 convulsions occurred on the sixth day, two days before a diagnosis was made. In the order of their frequency, the signs and symptoms were: anorexia, diarrhea, weight-loss, tympanites, pallor, anxious facies, vomiting, constipation, cyanosis, convulsions.

Diagnosis was based on the repeated presence of numerous polymorphonuclear leukocytes in the low-power field of fresh, uncentrifugalized urine. It was invariably strongly acid, and often contained variable amounts of albumin, epithelial cells, erythrocytes and casts. *B. coli* was found in fourteen cases; *B. enteritidis* in one case. Only female infants were catheterized; specimens from male infants were usually obtained in sterile, Spicer urinals after the meatus and glans had been cleansed with 5 per cent. compound solution of cresol. Pus and traces of albumin may continue for weeks after symptoms subside and after weight increase is well established. Recovery was usually complete within six weeks.

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* Read before the Section on Diseases of Children at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N J, May, 1925

[1] Huttenbrenner. Lehrbuch der Kinderheilkunde, 1876, p. 453.

[2] Escherich, T: Ver d Aerzte in Steiermark **5,** 1894.

[3] Finkelstein, H.: Jahrb f. Kinderh **43,** 1896.

[4] Goeppert, E.. Ueber die eitrigen Erkrankungen der Harnwege im Kindesalter, Ergebn. d inn. Med u Kinderh **2:** 30, 1908.

[5] Kovalosky, P, and Moro, E: Ueber zwei Fälle Kolisepticaemia bei Neugeborenen, Klin therap. Wchnschr. **50,** 1901.

[6] Von Reuss, A: Diseases of the New Born, New York, William Wood & Co, 1921, p 335.

[7] Wieland, A.: Cor.-Bl. f. Schweiz Aerzte **2,** 1918.

[8] Finkelstein, H: Lehrbuch. d. Sauglingskrankheiten, Ed. 3, Berlin, Springer, 1924, p 779

[9] Helmholz, H. F: Pyelitis in the New Born, M. Clin. N. Am. **1:** 1451 (March) 1918; Pyelonephritis, in Abt's Pediatrics **4:** 923, 1924. Helmholz, H. F., and Millikin, Frances. The Kidney: A Filter for Bacteria, Am. J. Dis. Child. **29:** 497 (April) 1925.

As most of these infants suffered from gastro-intestinal derangement, the amount of breast milk or other food was carefully supervised. Constant diuresis and alkalization of the urine (night and day) usually proved effective. The freshly passed urine was tested as a routine several times daily with litmus paper. As most of the patients were on the breast, from 1 to 4 ounces (30 to 120 c.c.) of water with sodium citrate and bicarbonate, from 5 to 10 grains (0.3 to 0.65 gm.) was given between nursings. Saccharin was occasionally added. When anorexia was extreme, fluid and food were given by dropper or gavage. During the period of severe vomiting, fluids were given frequently by rectum. In three cases (Cases 4, 12 and 15), daily hypodermoclyses were necessary for a week or more. In the artificially fed, part of the alkali was given in the food. Treatment was continued for several weeks after the urine was free from pus, albumin and bacilli.

The mode of infection, i. e., the route taken by the invading *B. coli* that cause pyelitis in infants, is still a question. There are three accepted, probable modes of infection: (1) the ascending; (2) the lymphatic of Franke,[10] and (3) the hematogenous routes. In the ascending route the organisms are supposed to pass the urethra, enter the bladder and pass up the ureter into the pelvis of the kidney. The frequency of pyelitis in girl babies of the diaper age led to this conception. It has not been substantiated by any conclusive experimental work. According to the so-called transparietal route, the lymphatics between the ascending colon and the right kidney are the supposed avenues of entrance. The permeability of the intestinal wall in the early days of life makes the hematogenous route the most probable. Intestinal *B. coli* presumably pass by way of the blood stream to the glomeruli, down the tubules to the pelvis. The sterility of normal blood is the result of phagocytosis by the blood elements, and the endothelial cells of liver, lungs, spleen and kidney. The recent experimental work of Helmholz shows that neither avirulent nor virulent *B. coli* can pass through the kidney filter in less than five hours. Only when the physiologic barriers of blood and kidney become broken down can pyelitis result. The virulence and dose of the organisms, the general and local resistance of the host, anomalies of the urinary tract which cause stasis (ureteral kink, stenosis of the ureter), and the shallowness of the lumbar recess are important factors in the etiology of pyelitis in children.

A chronological analysis of our fifteen cases shows that they fall into three periods. The first three cases (1, 7 and 9), reported by Dr. Helmholz, were diagnosed within a period of six weeks in the early winter of 1917; the next four cases (4, 5, 8 and 10) were discovered in the winter of 1922; the last eight cases were observed in January and February, 1925. No case of neonatal pyelitis was seen during the intervals, despite many urinalyses. As most of our patients presented symptoms referable to the gastro-intestinal tract, the question arises whether an enteral irritation produced a change in bacterial virulence or whether a virulent colon organism had gained entrance and produced an increased permeability of the intestinal wall. The absence of neonatal pyelitis in numerous infants examined during the intervals, and the occurrence of fifteen cases in three short periods lead one to conclude that the *B. coli* that produced these cases of neonatal pyelitis were bacteria of increased virulence and not the ordinary saprophytic forms.

CONCLUSIONS

1. Neonatal pyelitis is probably a periodic disease which occurs more frequently in male infants.
2. Gastro-intestinal symptoms, especially vomiting, anorexia, diarrhea and tympanites, predominate.
3. Microscopic examination and culture of the urine of fifteen nonthriving new-born infants with gastro-intestinal symptoms or cyanosis revealed pus and *B. coli* in fourteen instances.
4. The disease, when free from complications, usually responded within six weeks to diuresis and continued alkalization of the urine.
5. The infection is probably due to pathogenic, enteral *B. coli* which localize by way of the blood stream.

ABSTRACT OF DISCUSSION

Dr. L. T. Royster, University, Va.: There are two conditions on which we have been accustomed to look as very rare in the new-born: pyelitis and otitis. In a number of instances I have seen the two conditions in the same child. We know the frequency with which pyelitis complicates other infections in infancy and childhood; this is true in infections of the upper respiratory tract and of the intestinal tract. In young children, infections of the intestinal tract may complicate nasopharyngeal infections. Pyelitis is a frequent complication. I wonder how many of these infections are primarily colonic in origin. In most cases of pyelitis that have existed for any length of time, colon bacilli can be found. I should like to ask Dr. Sauer how many times he has seen pyelitis of the new-born in the early stages; in other words, whether he has seen these cases early enough to know whether they were colon infections primarily or secondarily. You cannot rule out pyelitis by not finding pus in the urine in any age. Sometimes, at the time of the fever there are only a few scattered cells; but at the time the temperature falls to normal there is an outpouring of pus and frequently a diagnosis cannot be made until the temperature has reached normal. As to treatment, I would recommend flushing out the urinary tract with as much water as the infant can be induced to take, and I do not hesitate to use the stomach tube. I have not had the courage, in very young infants, to use as large doses of hexamethylenamin as recommended by Dr. Helmholz. I have not seen any infection follow the use of small doses. I doubt that alkalization is of any benefit, except so far as the alkali produces diuresis. I believe water has more effect than anything else.

Dr. Myer Solis-Cohen, Philadelphia: I was interested to hear that these organisms were more virulent than *B. coli*. Ordinarily, *B. coli* is nonvirulent for man. If the organisms are planted in the fresh, whole, coagulable blood of a healthy individual they will be destroyed. Heist, Solomon Solis-Cohen and I tested out *B. coli*, isolated from feces, in the whole blood of fifteen normal men. It disappeared in the blood of all. In pyelitis due to *B. coli*, the colon bacillus obtained from the patient's urine grows in the whole blood of the affected person, and it also frequently grows in the whole blood of a normal person. As fresh whole blood usually has good bactericidal power against *B. coli*, it is probable that the strain which produces infection is of increased virulence, because, if it were merely a case of lowered resistance in the patient, the bacilli would not grow in the whole blood of the normal control. I should like to know whether the mother had lowered resistance to *B. coli* from any previous infection. *B. coli* in cultures from the urine in pyelitis is not necessarily pathogenic for the patient. Sometimes several types of organisms are present on ordinary culture, some pathogenic for the patient and some nonpathogenic. Sometimes the organism pathogenic for the patient is in comparatively small numbers. When, in such a case, comparatively large numbers of *B. coli* are present that are nonpathogenic for the patient, they may on ordinary culture choke off and inhibit the growth of the other organism which is pathogenic for the patient and probably the etiologic factor. But if one places a drop of the urine in a sterile test tube and then puts in the tube from 3 to 5 c.c. of the patient's fresh, whole, coagulable blood and incubates for twenty-four hours, the organisms that are nonpathogenic to the patient will be destroyed or have their growth inhibited, while the infecting organism that is pathogenic for the patient will grow up. This method I have termed the pathogen-selective culture. In the cases mentioned in which there was infection from forceps or from otitis media, the presence of *B. coli* in the urine did not prove that *B. coli* was the cause of the infection.

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[10] Franke, C.: Aetiologisches zur Coliinfektion der Harnwege, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **22**: 623, 1911.

DR. HARRY LOEWENBURG, Philadelphia: The best method of treating these cases is by alkalization. Pyelitis is a disease in which medicine is more important than food. I saw a child that had been ill for three or four weeks with temperature elevation. It was proved to be pyelitis. The disease was controlled by large doses of sodium citrate. I think Dr. Sauer administered alkali night and day. No case can be adequately treated unless the nurse is impressed with the importance of the constant and prolonged administration of alkali until all symptoms have subsided.

DR. L. W. SAUER, Evanston, Ill.: I am glad the last speaker emphasized the importance of a constant alkalization of the urine in these cases. Early diagnosis is another most important feature. When new-born infants show these symptoms, urine analysis should be done at once. Constant alkalization of the urine should be carried out, waking the child at night to give constant treatment for the whole twenty-four hours. With plenty of water, this gives good results. Food must be carefully supervised. The alkali has also a diuretic action, which is very beneficial. None of the mothers had pyelitis or other noteworthy infections. I am undecided, whether these were primary *B. coli* infections. The first specimens of urine showed pus and albumin. Perhaps the intestinal symptoms were due to pathogenic *B. coli* in the intestinal canal. I believe there is a difference between virulent and avirulent types of *B. coli*. In our series I think we were dealing with the virulent form.

The Spinal Fluid in Cranial Injuries.—The value of lumbar puncture during the observation of cranial injuries is rendered obvious by Payr's remark, who compares it with a barometer reading, as it affords information on the prevailing variations and supplies a warning sign in a commencing infection. Tilmann also attributes the greatest importance to lumbar puncture in injuries to the skull. He says: Every increase of albumin indicates the presence of inflammatory or regenerative changes going on within; stronger degrees indicate cerebral abscess. An increased pressure that falls little or not at all speaks for an intracerebral lesion, and with simultaneous high albuminous content, for cerebral abscess; with low albuminous content for an inflammatory cyst, and very small increase for a retention cyst. If the increased pressure falls rapidly, then a meningitis serosa is usually present. Clairmont considers that in cases which show no increase of pressure, but only a very small amount of bloody spinal fluid, or an outflow of pure blood, that the indication is given for the performance of trepanation of the skull, which stimulates the disturbed production of cerebrospinal fluid.—Pappenheim, Martin: Lumbar Puncture, William Wood & Co., 1925.

TRYPARSAMIDE TREATMENT OF NEUROSYPHILIS

SECOND REPORT [*]

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AND
HENRY R. VIETS, M.D.
BOSTON

Last year at the meeting of this section, we [1] reported on our experience with tryparsamide in the treatment of various types of neurosyphilis, and drew conclusions regarding its efficacy as compared with other forms of treatment. We wish at the present time to modify those conclusions on the basis of another year's experience. At that time we reported that tryparsamide had a definite effect on the clinical course of neurosyphilis and especially modified the serologic findings. In the majority of instances the pleocytosis of the spinal fluid was reduced to normal after from six to twelve injections. This experience has been borne out in our subsequent work. A year ago, we reported also that the spinal fluid Wassermann reaction and the colloidal gold curve had been but relatively little affected.

During the last year, the serologic results of treatment with tryparsamide have been quite striking and very gratifying, particularly in the early cases of meningovascular neurosyphilis and some cases of tabes. For example, in one case of a young woman with meningovascular neurosyphilis, having convulsions and a paretic type of spinal fluid, ten injections of tryparsamide were sufficient to produce entirely negative serologic findings. Again, in a man of 40, with tabes and serologic findings typical of this condition, the spinal fluid became entirely negative except for a weak colloidal gold curve, after thirteen injections of tryparsamide. While these results are extremely striking, they are by no means the rule, and are not to be expected in every case.

With the long continued use of tryparsamide, however, more constant good results may be expected. For example, a patient with tabes, after having received fifty-nine injections of arsphenamin and fourteen spinal drainages, had a reduction of his colloidal gold curve from a paretic curve to negative, and the cell count dropped from 119 to 1. The spinal fluid Wassermann reaction, however, remained positive in 0.2 c.c. After seventy-seven injections of tryparsamide, the Wassermann reaction was slightly positive in 0.6 c.c. and negative in 0.4 c.c., and the other tests remained normal. In this instance, the Wassermann reaction was not changed until more than fifty injections of tryparsamide had been given.

Similar results were obtained in cases of paresis. Occasionally, but very rarely, good serologic results would be obtained with a relatively small amount of treatment. In most cases, however, a large amount of treatment was necessary before serologic improvement took place. Thus, one paretic patient, with a spinal fluid Wassermann reaction positive with 0.05 c.c., 25 cells per cubic millimeter, a large amount of globulin, and a colloidal gold curve of 5555532000, showed little improvement in the serologic findings after thirty, forty and fifty injections of tryparsamide, but after seventy-five injections, the spinal fluid Wassermann reaction became negative with 0.8 c.c., the cells were reduced to 7 per cubic millimeter, the globulin to a faint trace, and the colloidal gold curve to 2333210000. It is our opinion that in many cases in which the serologic improvement has not taken place under tryparsamide treatment, treatment has not been continued long enough. At the present moment we are not in a position to state how much treatment is really necessary to bring the serologic findings to a point at which no more improvement can be expected by a continuation of treatment.

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[*] From the Boston Psychopathic Hospital and the Massachusetts General Hospital.

[*] Read before the Section on Nervous and Mental Diseases at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[*] This study was aided by a grant of funds from the Division of Mental Hygiene, Massachusetts Department of Mental Diseases. The tryparsamide was made available through the courtesy of the Rockefeller Institute.

[1] Solomon, H. C., and Viets, H. R.: A Comparison of Tryparsamide and Other Drugs in the Treatment of Neurosyphilis, J. A. M. A. 83: 891 (Sept. 20) 1924.

We have shown that it is often necessary to give more than fifty injections before a good result can be obtained. For example, a paretic patient who went through a clinical remission after a few injections of arsphenamin, but who showed no serologic improvement after fifty injections of arsphenamin, was given sixty-five tryparsamide injections. The only changes were a diminution in the Wassermann reaction from being positive in 0.5 c.c. to positive in 0.1 c.c., a change too slight to have any real significance; a reduction in the cell count to normal, and a very slight reduction in the strength of the colloidal gold curve. These changes, with the possible exception of the cell count, might very easily be discounted because of their very slight amount. Yet, we are in no position to state that another thirty to fifty injections of tryparsamide would not give us a very satisfactory result. It has been our experience, then, that in some cases seventy-five or more injections are necessary before serologic improvement takes place.

Relatively similar statements may be made regarding the effects of tryparsamide on the clinical status of patients. Very frequently we have seen more prompt and rapid improvement in the clinical symptoms with tryparsamide than with other forms of treatment. A tabetic patient, aged 45, who had had fifty injections of arsphenamin over a period of six years, showed practically no clinical improvement, nor was there any marked change in the serologic findings. After sixteen injections of tryparsamide, however, although the serologic findings were not markedly changed, the patient improved clinically very rapidly, making more progress in six months than he had made in the previous six years.

Other patients have also improved clinically, and often very rapidly, in spite of the fact that there has not been a marked serologic change as a result of the tryparsamide treatment. In a patient, aged 40, with cerebral syphilis, in whom the serologic findings were strongly positive, rapid clinical improvement took place after only six treatments of tryparsamide. This improvement continued during thirty more injections of tryparsamide, in spite of the fact that serologic changes, except for the decrease in cell count and amount of protein in the spinal fluid, were unchanged. It is possible in this case also that we are dealing with a patient who will ultimately show good serologic improvement under continued tryparsamide treatment. Another patient, who had more than forty injections of tryparsamide, also showed very slight changes serologically, but the clinical improvement was rapid and very marked.

It is always difficult to draw definite conclusions about the clinical effect of drug treatment in cases of neurosyphilis, and there is likely to be, as we have mentioned in our previous communication, a difference in opinion of two observers on the same group of cases. There does seem, however, to be reason to state that a majority of patients who receive tryparsamide show an immediate sense of improvement. Despite this, it is not always true that the improvement in the tabetic patient continues, and our experience is a little at variance, for at least the conclusion drawn by us differs somewhat. In the case of one of us, there is a firm impression that the old, broken-down tabetic patients really respond much more satisfactorily to tryparsamide than to any other drug treatment, with the exception of those with gastric crises, in whom the outlook is not so good. The other feels that in a number of cases the clinical results have not been as satisfactory as the serologic, and is rather inclined to believe that more permanent clinical results are obtained by intraspinal treatment than by tryparsamide. We would both agree, however, that there is less danger in the treatment of the old degenerative type of tabetic patient with tryparsamide than with intraspinal methods.

Paretic patients, however, who do not go to pieces in the first few weeks of treatment, have made very good clinical improvement. A majority have developed satisfactory remissions for over a period of a year or more. A number of patients, in whom clinical remissions occurred under arsphenamin, have been changed to tryparsamide and remained in their remissions.

As to the question of the relative efficiency of tryparsamide and other forms of treatment, we feel a considerable amount of hesitancy in drawing any conclusions. From what has been said above, however, it is obvious that good serologic results have been obtained in the cases of paresis. We have had satisfactory serologic results also in patients who have had other treatment previously without success. For example, a tabetic patient, who in 1919 had a spinal fluid Wassermann reaction positive with 0.05 c.c., 134 cells per cubic millimeter, globulin and total protein increased, and a colloidal gold curve of 5443210000, received 116 injections of arsphenamin, thirty-six spinal drainages, twelve intraspinal and four intracisternal injections of serum, and mercury over a period of nearly four years. He had at the end of that time a spinal fluid Wassermann reaction positive in 0.1 c.c., 38 cells per cubic millimeter, globulin and albumin increased, and a negative colloidal gold curve. After a relatively few injections of tryparsamide, there was a diminution in the strength of the Wassermann reaction; and after eighteen months of treatment with sixty-nine injections, the spinal fluid Wassermann reaction was negative with 1 c.c., there were no cells, there was a very slight amount of globulin, the total protein was normal, and the colloidal gold curve was negative. Similar but less striking results, evidently showing the superiority of tryparsamide over arsphenamin in its effect on the serologic findings in the spinal fluid, have been seen; yet for obvious reasons we cannot at the present time speak too dogmatically. Mention may be made also of the simplicity of tryparsamide therapy for both the operator and the patient, as compared with long continued intrathecal injections.

Our feeling again is a little different than it was a year ago regarding the untoward results of tryparsamide. The most serious is amblyopia. In the course of the past year, we have had but one case of amblyopia, and that in a patient with optic neuritis who perhaps should not have been subjected to this drug. The question of amblyopia, while always to be considered, should not prevent the use of tryparsamide when it is otherwise indicated. Other symptoms of a somewhat unpleasant nature have occurred, such as ringing in the ears, short periods of mild confusion, and very rarely a slight increase in the mental symptoms in the cases of paresis. In no case has this been of sufficient moment to lead either to the cessation of the use of the drug or to any permanent injury to the patient. Occasionally, a slight amount of nausea or even vomiting occurred after injections, but less frequently than in patients receiving arsphenamin. Nitritoid reactions have not been observed, nor have we seen any instances of exfoliative dermatitis. We have seen two or three instances of jaundice in patients receiving tryparsamide, which may or may not have been caused by the drug.

In many of our cases, we have utilized mercury and arsphenamin in conjunction with tryparsamide.

SUMMARY

1. Serologic improvement has been marked in the majority of cases of all types of neurosyphilis treated with tryparsamide. In addition to the decrease in pleocytosis in the spinal fluid reported last year, we have found reductions in the Wassermann reaction, colloidal gold curve, and globulin.
2. Occasionally, the spinal fluid has become normal after a few injections of tryparsamide; but in the majority of cases of parenchymatous neurosyphilis, fifty or more injections have been required to produce serologic improvement.
3. Some cases, having received long courses of treatment with arsphenamin and with other methods without marked serologic improvement, have responded to tryparsamide.
4. In general, in patients with neurosyphilis, more rapid and more marked clinical improvement has been observed under treatment with tryparsamide than with the older methods. Cases of early paresis have usually shown remissions, and have continued to hold their clinical improvement over the two-year period during which we have been using tryparsamide. Clinical results have not been as good with the older cases of tabes with marked signs of degeneration of the spinal cord.
5. Very few untoward symptoms, and none of marked importance, have occurred in the last year.
6. It has been our experience that it is often necessary to give tryparsamide over a period of a year or longer, before either good serologic or clinical results can be expected.

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ABSTRACT OF DISCUSSION

Dr. James B. Ayer, Boston: I have been associated with Dr. Viets in the treatment of perhaps one third of the cases reported. Naturally, my conclusions about the drug are similar to his. My personal feeling is that meningovascular syphilis and the tabetic group, for the most part, do as well under the old intravenous arsphenamin treatment as on tryparsamide. Exceptionally a case arises that is resistant to arsphenamin and does yield to tryparsamide. Therefore, this drug can be used as an adjunct in such cases. When it comes to the paretic group, we all know how we accomplish something in the early stages with arsphenamin. When it comes to preventing a relapse, we are powerless to do so, with arsphenamin, serum therapy, spinal drainage or mercury. Tryparsamide seems thus far to have been much more efficient in this respect. We were afraid of eye symptoms, as we properly should have been, but the present report suggests that the likelihood of optic atrophy is small and apparently not increasing as time goes on. The secret of successful treatment with tryparsamide, as with arsphenamin, appears to be the use of enough of it. It is remarkable to see the successful use of tryparsamide in some of Dr. Solomon's cases in which weekly injections have been employed over nearly two years. In closing I wish to say a word of thanks to the Rockefeller Institute. For two years it has supplied us and many a clinic with all of the drug that could be used, absolutely free, with "no strings tied to it." It seems to me that it has carried on the preliminary trial of tryparsamide in a way that is greatly to be commended, and I believe that appreciation of its attitude should be made known at the present time.

Dr. Julius Grinker, Chicago: I have used tryparsamide since the drug was released, and while the number of cases in which I have used it is not large enough to give statistics, my impression is that it is no better than the Swift-Ellis treatment. I have treated a number of patients with paresis and tabes energetically and for long periods with the Swift-Ellis treatment; those patients are still under my observation. They have long remissions. Some of them are working; others, though having these remissions clinically, still show a strongly positive Wassermann reaction. I believe that most cases of paresis continue to show such a reaction, though the cell count is reduced, and the colloidal gold reaction is changed from a paretic to a syphilitic curve in some cases. The case that I have had longest under observation and was treated by the Swift-Ellis method is now of five years' duration. The Swift-Ellis treatment must not be laid on the shelf just because we have tryparsamide. I like the conservative manner and tone in which the authors presented their experience with tryparsamide. They do not repeat the statement made by the optimists, that three courses of treatment, consisting of eight injections each, will cause a permanent disappearance of the positive Wassermann reaction and produce what is tantamount to a cure of paresis. I have thus far had no cases of optic atrophy, though I was obliged to discontinue the use of tryparsamide because of the blurring of vision which it produced in two of my cases. Last summer, in Wagner's clinic, I was shown a large number of paretic patients who had received the malaria treatment; I was surprised at the great improvement and almost complete recovery of some of them. That treatment offers great prospects for the future and far excels any other method of treatment.

Dr. Alfred Gordon, Philadelphia: Several years ago I undertook the systematic intraspinal treatment of neurosyphilis, including paresis, tabes, all kinds of hemiplegias, headaches and epilepsy with a syphilitic history. That systematic treatment was carried out for many months. In a very small number of the cases (there were more than 200) the clinical improvement ran parallel with the serologic improvement. Hopes were entertained by the patients and others as to the ultimate outcome, because serologic findings had proved to be exceedingly favorable and still the clinical manifestations were different, and vice versa. I have obtained great improvement in the clinical aspect of the cases, but very little improvement from the serologic point of view. I should like to ask Dr. Viets whether he observed anything of that sort, or otherwise, in his treatment with tryparsamide. I may also mention, as Dr. Ayer brought out, that in neurosyphilis it is not the injection alone that counts; it is the general management of the cases. One cannot treat all the paretic patients in a systematic way and rely exclusively on the drug treatment; there are so many elements that enter into the individuality of the patient, or into the individuality of the treatment. I have obtained equally good, or bad, results with the intravenous injection, and more so with the intramuscular injections. I have treated with intramuscular injections cases of paresis, tabes, and spinal syphilis for a long time without any other treatment, and the results were equal to those I received formerly by the other methods.

Dr. Henry R. Viets, Boston: I do not want to create the impression that we have given up the older methods of treatment. We are still interested in the Swift-Ellis treatment, in the intravenous treatment, and somewhat interested, or beginning to be interested, in the malarial treatment; but for the purposes of this study we felt, two years ago, that we had better take a certain number of cases, about a hundred, and carry them through with tryparsamide to see what our results would be—and that we have done. Some of these were cases that had not responded well to other forms of treatment, and we find that they respond better, on the whole, to tryparsamide. Also, it is to be noted that they respond more quickly to tryparsamide. We have had some excellent results from the intraspinal treatment over long periods. We feel that tryparsamide, though, is much easier to give, for both the operator and the patient, and that the results, on the whole, have been more striking and quicker than with the other method. Dr. Grinker spoke of the positive Wassermann test remaining in the spinal fluid. It has been our observation in the last year (not so one year ago) that we have had more negative spinal fluid Wassermann reactions with tryparsamide than with other forms of treatment. In regard to the variation between clinical and serologic improvement, most of the patients under tryparsamide respond quickly serologically. That is not always the case clinically, but, on the whole, they have responded more quickly both clinically and from the serologic point of view than with other forms of treatment.

Dr. George W. Raiziss, Philadelphia: Were there any cases of optic atrophy in your series under the prolonged tryparsamide treatment? Did any reactions take place immediately or shortly after the administration of the drug?

Dr. Henry R. Viets, Boston: I mentioned only one case of amblyopia in the last year, and that in a patient who already had optic neuritis. We have had no others. We have had a few immediate reactions, very slight in nature, such as some nausea and vomiting, without any permanent bad effects.

THE ALLEGED SYNERGISM OF MAGNESIUM SULPHATE AND MORPHIN *

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During the last few years, considerable clinical literature has appeared on the subject of the synergism of magnesium sulphate and morphin. A complete review of these papers is not necessary here, since practically all the writers interpret their findings on the basis of (1) a misunderstanding, and (2) a false conception.

THE MISUNDERSTANDING

This misunderstanding lies in the fact that sincere but entirely inadequate animal and human experimental work has been accepted as proving that such a synergism exists, whereas careful and thoroughly scientific studies have shown that this simply is not true at all. The belief in this synergism originated with Gwathmey who, in 1921, proposed the conversion of colonic anesthesia, as previously developed by him, into synergistic analgesia by making use of the synergistic effects of magnesium sulphate and morphin when the two drugs are injected hypodermically prior to the introduction of the ether-oil mixture into the colon. He[1] states that this combination was first suggested to him by Pellini, and from the work they performed together, Gwathmey offers the following as his sole experimental evidence:

> A sufficient number of animal experiments was conducted to prove that one-eighth grain of morphin in 2 c.c. of a 25 per cent. solution of chemically pure and sterilized magnesium sulphate, given hypodermically and repeated twice at half-hour intervals, analgized an animal sufficiently for the full force of an artery clamp to be placed anywhere on the skin without being noticed by the subject. The controlled animal, with the same dosage of morphin, given in plain water hypodermically, was not analgized to anything like this degree.

The size of the animals used is not mentioned, nor is the number of experiments performed stated. Also, to accept the mere statement that the dogs given morphin alone were "not analgized to anything like this degree" as one having any very real scientific value is impossible, especially as it is well known that dogs become markedly insensitive to pinching on even very small doses of morphin, though they will at the same time resist cutting and also show signs of heightened activity of the more superficial reflexes, such as to light and sound.

As to the operation of this synergism in man, we have the following from the same paper: "At the Presbyterian Hospital it has been definitely determined that the addition of a small amount of magnesium sulphate to the usual hypodermic of morphin increases the value of the hypodermic from 50 to 100 per cent." Again, not a word regarding the experimental conditions; just the statement that "it has been definitely determined."

Certainly this is insufficient evidence on which to base a belief in the alleged synergism. Furthermore, it was definitely shown by Issekutz in 1915 that such a synergism does not occur. Although Issekutz performed his experiments six years before Gwathmey made his announcement, Gwathmey does not seem to have been familiar with the work, for in 1921 he[1] writes: "A search of the literature does not give a single reference to the use of magnesium sulphate with morphin for analgesic purposes." Issekutz[2] studied the effects of magnesium sulphate on rabbits in the hope of finding some way of increasing its safe range of anesthesia in the treatment of tetanus. He combined it with other drugs, and presents thoroughly convincing experimental evidence of the following: When magnesium sulphate is combined with scopolamin there is a true potentiation of the action; when it is combined with chloral hydrate, paraldehyd, hedonal, urethane or phenobarbital (luminal), the sum total effect is only addition and there can be no question of synergism; and when it is combined with morphin, not only does potentiation not take place, but the combination is more toxic than either the magnesium sulphate or the morphin alone. Nor is clinical evidence against the belief wanting. Those who foster the idea of this synergism are fond of quoting the work of Weston and Howard,[3] who used the magnesium sulphate quite effectively as a sedative in the insane in states of more or less excitement and insomnia; but no one has as yet quoted from that part of their paper in which they state that "in cases not quieted by 6 to 10 c.c. of 50 per cent. magnesium sulphate solution, morphin was also of no value except in heroic doses, and when the magnesium sulphate alone failed to give the relief it was of no effect when used in combination with one-fourth grain of morphin."

THE FALSE CONCEPTION

That there is among present contributors to this subject, a failure to grasp the nature of the obligation which devolves on one who would study synergism—namely: to select such phenomena for modification by drug action

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[1] Gwathmey, J. T.: Synergistic Colonic Analgesia, J. A. M. A. **76**: 222 (Jan.) 1921.

[2] Issekutz, B.: Therap. Monatsh. **29**: *379, 1915.*

[3] Weston, P. G., and Howard, M. Q.: Magnesium Sulphate as a Sedative, Am. J. M. Sc. **165**: 431 (March) 1923.

as will easily lend themselves to sharply drawn comparisons; and to distinguish clearly between addition and true synergism; and, above all, not to describe as synergism the overwhelming effect seen when abnormally large doses of either drug are given, may be adduced, I think, from the following facts:

1. In nearly all cases, the ability of the magnesium sulphate-morphin combination to lessen the pains of childbirth is selected for study. That any conclusions drawn from such observations must always be extremely inaccurate, is surely apparent to any clinician with a knowledge of the great variability of labor pains entirely independently of the exhibition of any drugs whatever. Furthermore, if we accept such studies at all, then not only must they comprise a comparison of labor treated with the combination with labor untreated, but also labor treated with the combination must be carefully contrasted with labor treated with either one of the drugs alone. This is not done.

For instance, Adams,[4] in one of the recent contributions to the subject, studies the effect of the combined use of the two substances in sixty cases. In 21.5 per cent. of the cases the dose (2 c.c. of 25 per cent. magnesium sulphate plus one-sixth grain of morphin) had to be repeated. Results of the entire sixty cases were: excellent, 25 per cent.; good, 25 per cent.; fair, 26.6 per cent.; poor, 16.6 per cent.; none, 6.6 per cent. As controls, 299 cases in which medication was not given were used, although the amount of pain suffered by the patients was not tabulated as above at all. No patients were treated with either drug alone, so that a comparison of morphin with morphin-magnesium sulphate was not made in this paper. This observer is even skeptical himself of his results, for anent the doubtful advisability of using the amount of pain complained of at labor as a test for the efficacy of the analgesic properties of a drug, he writes: "Under conditions apparently the same as regards the intensity of the pains and what they accomplish, one patient will suffer extremely, while another with a different nervous organization will to all appearances suffer very little."

2. In nearly all cases reported in the literature, not only is the magnesium sulphate-morphin combination used solely, but the amounts of morphin given in this combination are so large that the conclusions drawn as to the synergism are thus rendered of the most doubtful value, since we have no experience of the effect of such heroic doses of morphin if given alone. And, again, in the few reports in which morphin is given alone, the drug is not given in the same large amounts in which it appears when the combination with magnesium sulphate is employed.

The trend of these investigations will be sufficiently shown by reviewing here one paper that is being quoted of late: Glass and Wallace,[5] reporting on the use of magnesium sulphate and morphin synergistically as preoperative treatment for postoperative comfort, describe their technic as "hypodermoclysis of a 4 per cent. chemically pure and sterile solution of magnesium sulphate, 200 c.c. given one and one-half hours before operation." In their conclusions they say: "The synergistic effect of magnesium sulphate with the preoperative morphin tends to prolong the sedative action to such an extent that rarely is it necessary to give morphin postoperatively." If a comparison is made of their cases in which morphin alone was used with those in which morphin plus magnesium sulphate was employed, one will not be surprised that the sedation was prolonged in the latter class.

Omitting the one case in each series in which pantopon was used, which is of no importance here, their cases may be arranged according to dosage as in the accompanying table.

Arrangement of Cases According to Dosage

	Number of Cases	Morphin in Grains 1/6	1/5	1/4	3/8	2/3	1
Morphin alone	12	2	..	10	..	..	..
Morphin plus magnesium sulphate.......	14	..	1	2	7	2	2

If we accept the average therapeutic dose (the one on which our experience of the drug is based) of morphin as being from one-sixth to one-fourth grain, it will then be seen that in the first series all patients received just that dose, whereas in the second series only three received that amount, the eleven other patients being given doses that ranged from three-eighths grain to 1 grain. This was in addition to 200 c.c. of 4 per cent. magnesium sulphate solution and the two or three hypodermic injections of 1.5 c.c. of 25 per cent. magnesium sulphate in which the morphin is given!

I do not think that one can legitimately speak of synergism at all when the overwhelming nature of the dosage employed carries the resultant phenomena entirely outside the range of ordinary experience with average doses of the drugs.

ANIMAL EXPERIMENTS

In studying this alleged synergism, I have worked with dogs exclusively for two reasons: first, because Gwathmey's original statements were based on observations made on these animals; and, second, because he asserted that by employing these drugs synergistically he could reduce the amount of ether-oil used in the ether-oil colonic method of anesthesia by one half, and I had early observed that I could cause this anesthesia to appear in dogs under conditions entirely similar to those in man. To date, fifty-one animals have been used and 113 experiments performed.

These experiments, a preliminary report of which has been made elsewhere,[6] have extended throughout the last two years and have had a twofold object: (1) to determine exactly the conditions of successful colonic anesthesia in the dog when morphin alone was used as the preliminary medication; and (2) to observe to what extent, if any, these conditions could be modified by the use of magnesium sulphate plus morphin as the preliminary medication.

The studies group themselves under five heads, to be denominated here Series A, B, C, D and E.

SERIES A

Object: *To determine the amount of ether-oil that is always effective in inducing satisfactory anesthesia.*

Method: Dogs, ranging in weight from 5 to 23.5 kg., were injected subcutaneously in the side with an aqueous solution of 0.01 gm. of morphin sulphate per kilogram of body weight. After one hour they were tied to a dog-board on their left side; a No. 29 soft rubber catheter was lubricated and introduced slowly into the rectum and colon for an average distance of 7 inches, and the ether-oil mixture was allowed to flow in from four to six minutes. A mixture of 75 per cent. ether and 25 per cent. olive oil was used in all cases, with the following results:

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[4] Adams, T. W.: Morphin and Magnesium Sulphate as an Obstetrical Analgesic, Am. J. Obst. & Gynec. 8: 266 (Sept.) 1924.

[5] Glass, S. J., and Wallace, H. S.: Preoperative Treatment for Postoperative Comfort, J. A. M. A. 78: 24 (Jan. 7) 1922.

[6] Beckman, Harry: On the Alleged Synergism of Magnesium Sulphate, J. Lab. & Clin. Med. **10**: 189 (Dec.) 1924.

1. One ounce of the mixture per 40 pounds (18 kg.) of dog was ineffective in inducing anesthesia.
2. One ounce of the mixture per 30 pounds (13.6 kg.) of dog was little, if any, more effective.
3. One ounce of the mixture per 20 pounds (9 kg.) of dog was in all cases effective in inducing and maintaining surgical anesthesia.

SERIES B

Object: To determine the amount of morphin sulphate that is necessary to inject in order to obtain *satisfactory* anesthesia when the ether-oil is introduced.

Method: It having been determined in Series A that 1 ounce of the ether-oil mixture per 20 pounds (9 kg.) was always effective in inducing anesthesia when the preliminary dose of morphin had been 0.01 gm. per kilogram of body weight, this dose was therefore fractionated and dogs were injected with preliminary doses of morphin ranging from 0.01 gm. as the highest to 0.001 gm. as the lowest, with the following results:

1. On the lower doses there is usually a brief excitement stage which lasts for a short time after the ether-oil is introduced. There is no approach to anesthesia on these lower doses.
2. As the doses are increased, the excitement stage fails to appear and anesthesia begins to be approached. Beyond 0.0075 gm. per kilogram, light anesthesia is frequent but sometimes fails to occur.
3. Whenever 0.01 gm. of morphin sulphate per kilogram of body weight is injected preliminary to the introduction of the ether-oil, anesthesia invariably results.

SERIES C

Object: to determine the amount of time that should elapse between the injection of the morphin and the introduction of the ether-oil in order to obtain the most satisfactory anesthesia.

Method: Dogs were injected with the effective dose of morphin and then the effective dose of ether-oil was introduced at intervals of time ranging between fifteen minutes and one hour and fifteen minutes; with the following results:

1. At fifteen minutes, attempts to introduce the tube to have it retained nearly always fail because the peristaltic increase induced by the morphin is still very marked.
2. At thirty minutes, it is usually possible to obtain anesthesia, which, however, is oftentimes much slower in coming on than it would have been had the interval been longer. Sometimes, also, peristalsis is still sufficiently active to cause the animal to eject a large part of the mixture and thus cause the attempt to fail.
3. At one hour, anesthesia is always obtained.

COMMENT ON SERIES A, B AND C

Morphin sulphate, 0.01 gm. per kilogram of body weight, followed in one hour by 1 ounce of the ether-oil mixture, is always effective in inducing and maintaining surgical anesthesia. This anesthesia is completely established in an average time of thirteen minutes and lasts from one to one and a quarter hours. The usual test for complete anesthesia is the ability to make an abdominal incision through all the layers of the skin in a dog having complete muscular relaxation. However, in order to be doubly sure, in a number of cases (selected at random) the abdomen has been completely laid open, and rough manipulative procedures have been performed on the intestine. Muscular relaxation is always complete, though the partial retention of reflexes is always noted; in several cases, dogs have responded to a whistle by partially raising the head while major surgery was being done on the abdomen.

There is a quite remarkable absence of salivation and of any movements of the body in the second (excitement) stage. Fifty-eight experiments were performed.

An abbreviated protocol is here given:

Dog 17.—Dec. 9, 1924. Male; 12.5 kg.; estimated age, 2 years. Condition good. First anesthetic.

12:00 m.: Morphin sulphate, subcutaneously, right side, 0.125 gm. in 4 c.c. of water.
12:56 p. m.: Placed on board, tied down on left side. Resisted pricking skin of abdomen with knife.
1:02 to 1:08: Rectal tube introduced and 41 c.c. of ether-oil administered (1 ounce per 20 pounds [9 kg.]).
1:14: Dog cannot be aroused but lid reflex is undiminished.
1:25: Placed on back and incision made down to peritoneum with complete muscular relaxation and perfect anesthesia. Four interrupted sutures.
2:16: Anesthesia continues.
2:20: Introduced small catheter beside the other and washed out with 500 c.c. of tap water.
2:33: Voluntary movements.
2:50: Rolled himself off the dog-board.
3:10: Dog returned to kennel; moves about on legs groggily, selecting place to lie down; lies down in natural position.
4:00: Sleeping, but quite easily aroused.
Dec. 10
9:00 a. m.: Dog completely recovered.

In the interval of one hour, between the injection of the morphin and of the ether-oil mixture, the dogs are allowed their freedom in a large space. During this time they defecate and urinate several times, but vomit only rarely. They feebly resist catching, and the weakness of the hind legs, typical of morphin, is observed in all cases. When placed on the anesthetizing table they show no signs of respiratory embarrassment, although the amplitude of the respirations is perhaps slightly less than in the normal, and the rate a little slower. In all cases they are able to stand, though somewhat groggily, one-half hour after the ether-oil mixture has been washed out of the colon, and when removed to the kennels at this time they always move about and select their own place for lying down.

Most of these experiments were performed in the afternoon, and the animals were returned to the kennels between 4 and 5 o'clock. They were always found to be completely recovered at 9 in the morning and remained in a perfectly normal state thereafter.

SERIES D

Object: To attempt the reduction of the amount of ether-oil to one-half by adding magnesium sulphate to the preliminary morphin medication.

Method: The preliminary medication consisted of the effective dose of morphin (0.01 gm. per kilogram) plus 2 c.c. of a 50 per cent. magnesium sulphate solution in one half of the cases, and the effective dose of morphine plus 4 c.c. of 50 per cent. magnesium sulphate in the other half.

Results: In all but one case, anesthesia failed to be induced. This one successful case (4 c.c. of magnesium sulphate) can only be looked on as the "one swallow which does not make the summer," since it is much more than counterbalanced by the twenty-three cases in which anesthesia did not occur. The criteria for surgical anesthesia were the same as in the preceding series.

The number of experiments performed was twenty-four.

SERIES E (*a*)

Object: To attempt a reduction in morphin by adding to it magnesium sulphate in the preliminary medication, using that amount of ether-oil which is always effective when full doses of morphin are given alone.

Method: As in Series B, the effective dose of morphin (0.01 gm. per kilogram) was fractionated and the dogs were injected with preliminary doses ranging from 0.01 as the highest, to 0.001 as the lowest, the injection being given in 4 c.c. of a 50 per cent. magnesium sulphate solution in all cases. The amount of ether used was 1 ounce per 20 pounds (9 kg.; compare Series B 3).

Results: All these dogs exhibited a peculiar reaction. As the ether began to be absorbed from the colon they began howling, and as absorption progressed the howling increased in intensity and persisted until the attempt to induce anesthesia was terminated by washing out the colon. None of the animals indicated, by nose-pointing or otherwise, the site of the disturbance that was causing the distress. On the lowest, medium and upper doses of morphin this distress was quite agonal in intensity, and only on doses above 0.0075 gm. per kilogram did it begin to diminish. Dogs given the full effective dose of morphin (0.01 gm. per kilogram) did not manifest this reaction at all but went rapidly into anesthesia, as they would have done had they received only the morphin without the magnesium sulphate.

SERIES E (*b*)

Object: Same as above.

Method: Same as above except that the magnesium sulphate was given one-half hour before the morphin.

Results: Same as above.

The number of experiments performed in Series E (*a*) and (*b*) was thirty-one.

An abbreviated protocol is here given:

DOG 35. April, 23, 1925. Male, 7 kg. Condition good; first anesthetic.

1:25 p.m.: Morphin sulphate, right side, 0.042 gm. (0.006 gm. per kilogram) in 4 c.c. of 50 per cent. magnesium sulphate solution.
2:22: Tied down on board and tube introduced. The dog is profusely salivated and respirations are jerky.
2:28 to 2:34: Ether-oil administered, 23 c.c. (1 ounce per 20 pounds, or 9 kg.).
2:40: Beginning to howl.
2:50: Howling very intense.
3:00: Howling very intense; restraint necessary.
3:17: Howling continues. Tube introduced and animal washed out.
3:24: Howling has ceased. Respirations continue jerky; animal released.

COMMENT ON SERIES E

The invariable occurrence of these symptoms of great distress when ether was introduced after the combined injection of morphin and magnesium sulphate was very surprising. That the cause of these symptoms was the coincident presence in the organism of magnesium sulphate and ether, and that morphin played no part in forming the picture, has been shown in a number of experiments performed outside this series. Magnesium sulphate was injected alone and then followed by the ether-oil, with the occurrence of the typical symptoms. Also the picture was seen when magnesium sulphate alone was followed by inhalation ether, thus showing that the mode of introducing the ether was not the deciding factor. Further studies of this unusual manifestation of drug action are being made, but at present no explanation of even a tentative nature can be offered.

SUMMARY OF RESULTS

It has been shown in the preliminary studies of ether-oil colonic anesthesia per se described in this paper that we can invariably induce anesthesia in dogs by this method if we properly adjust these three factors:

1. The dose of the ether-oil.
2. The interval of time elapsing between the injection of the morphin and the introduction of the ether-oil.
3. The dose of the morphin.

If we now employ Factors 2 and 3 at their points of optimum effectiveness and Factor 1 at something less than that point; or, if we employ Factors 1 and 2 at their optimum points and modify Factor 3, it will then be seen that we have two very accurate means of studying the definite amount of sedation accomplished by morphin in the experimental arrangement used here. Also, we are enabled to study the ability of any other drug to increase the effectiveness of the morphin by adding it to such doses of morphin as have been previously shown to accomplish less than the definite amount of sedation. In other words, we have an acceptable method for the study of the alleged synergism of magnesium sulphate and morphin.

That this synergism does not exist, I believe to be shown by the experiments herein described, in the following ways:

1. When all the conditions for inducing the anesthesia were optimum, except for a reduction in the amount of ether, the addition of magnesium sulphate failed to affect the conditions; i. e., failed to raise the sedative power of the morphin.
2. When all the conditions for inducing the anesthesia were optimum except for a reduction in the amount of the morphin, the addition of magnesium sulphate failed to affect the conditions; i. e., failed to raise the sedative power of the morphin.
3. When magnesium sulphate and ether were coincidently present, a characteristic symptom of distress (howling) occurred. This symptom was always present unless morphin had been given in full effective dose. The presence of the magnesium sulphate did not enable smaller doses of morphin to overcome this symptom; i. e., it failed to raise the sedative power of the morphin.

PREDICTION OF SYNERGISM

Gwathmey, in neither his original pronouncements on the subject of the alleged synergism of magnesium sulphate and morphin,[7] nor in the later applictions of this synergism which he has proposed,[8] has brought forward any animal or human experimental work that proves or even strongly indicates the admissibility of the contention. Therefore, it can only be assumed that he sincerely believed that this synergism must take place because of the essential nature of the two substances; i. e., the one (magnesium sulphate) an indifferent narcotic; the other (morphin) an alkaloidal narcotic. That such predictions cannot be made is easily seen when one briefly reviews the literature that appeared during the controversy waged on this point several years before Gwathmey's publications appeared.

1. Bürgi,[9] in 1910, in attempting to adduce from experimental evidence some fixed rules for the occurrence of synergism, said:

> Two narcotics introduced into the organism simultaneously, or one shortly after the other, generally have a much stronger effect than one would expect from a simple addition of the two separate effects. This strengthening effect is of greatest significance when the two drugs are chemically related to different substances within the organism; that is to say, when they have different cell-receivers. . . . On the other hand, the effects of the narcotics of the fatty series upon each other is only additive since these drugs all have the same cell-receiver.

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[7] Gwathmey, J. T. (Footnote 1): Current Progress in the Science and Practice of Anesthesia, J. A. M. A. **77**: 421 (Aug. 6) 1921.

[8] Gwathmey, J. T.; Donovan, E. P., and Cowan, L. R.: Painless Childbirth by Synergistic Methods, Am. J. Obst. & Gynec. **6**: 456 (Oct.) 1923. Gwathmey, J. T.; McKenzie, R. A., and Hudson, F. J.: Painless Childbirth by Synergistic Methods (Second Paper), ibid. **8**: 154 (Aug.) 1924.

[9] Bürgi: Deutsch. med. Wchnschr., 1910, Nos. 1 and 2.

The work of Breslauer and Waker[10] proved this position untenable by showing that the indifferent narcotics sometimes potentiate themselves, as in the case of the alcohols and urethanes, for instance.

2. Bürgi had, however, already dropped the "cell-receiver" and, in 1911, he[11] talks of the "pharmacological point of attack," holding in effect that the opium alkaloids, for instance, add their effects only because they attack the same points in the organism, likewise the fatty narcotics; but that when two drugs, one from each class, are given together, potentiation occurs because the organism is then attacked in two separate places.

However, the work of Issekutz,[12] Straub[13] and Caesar[14] had to be accepted as challenging him here, for they showed that certain of the opium alkaloids do not merely add among themselves, but actually potentiate reciprocally.

3. Bürgi then modified his position again, holding in effect that all indifferent narcotics simply add among themselves and all alkaloidal narcotics add among themselves, and that any exceptions must be placed within a subgroup in their class. He then offers a classification of narcotics, placing together in the different groups all those between which he had found no evidence of synergism. Thus he is led to place the antipyretics (which we may look on as weak narcotics for several reasons) in the same group with ether, chloroform, urethane, etc., because he found that no synergisms take place between these substances.

Overton,[15] however, had shown on lower forms that there is sufficient difference between the action of antipyrin and pyramidon, on the one hand, and the other antipyretics, on the other hand, to force them into a separate narcotic subgroup. And once there, they should potentiate the action of the narcotics of the fatty and aliphatic series left in the group from which they have just been taken. Lomonsoff,[16] however, one of Bürgi's own pupils, failed to find any evidence of this synergism.

Also, it has been shown that, in the cases of a number of substances acting in the same way but belonging to different pharmacologic subgroups, not only does the predicted synergism fail to occur, but additive effect does not take place. Thus, it was shown by Issekutz[17] that when giving combined doses of strychnin and picrotoxin to the frog, the effect was almost entirely the effect of that particular drug which was given in largest amount.

It is surely quite apparent from the foregoing that prediction of synergism in any given case by reason of the classification of the drugs that are being combined is practically impossible, and that only actual experimental results can be accepted as having any scientific value.

CONCLUSIONS

1. It has been shown in rabbits (Issekutz) and in dogs (this paper) that the alleged synergism between magnesium sulphate and morphin does not take place.

2. No satisfactory evidence has been brought forward to show that this synergism does occur in man.

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[10] Breslauer and Waker: Ztschr. f. allg. Physiol. **13**: 282, 1912.
[11] Bürgi: Ztschr. f. exper. Path. u. Therap. **8**: 523, 1911.
[12] Issekutz, B.: Arch. f. ges. Physiol. (Pflügers) **145**: 415.
[13] Straub: Biochem. Ztschr. **41**, 1912.
[14] Caesar, H.: Biochem. Ztschr. **42**: 316, 1912.
[15] Overton: Studien über die Narkose, 1901, p. 166.
[16] Lomonsoff: Ztschr. f. exper. Path. u. Therap. **8**: 566, 1911.
[17] Issekutz, B.: Arch. f. ges. Physiol. (Pflüger's) **151**: 456, 1913.

TREATMENT OF INTRACRANIAL HEMORRHAGE IN THE NEW-BORN *

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The adoption of any form of treatment for any condition should depend on whether that treatment is rational from the standpoint of known facts concerning the condition, or on a long experience, the success of which amply justifies the measures.

Of the conditions that are known to be especially fatal to the new-born infant, none is more frequent than intracranial hemorrhage. It is therefore quite necessary that we consider this condition from the standpoint of treatment since remedial measures, if successful, will go far toward reducing infant mortality in the first week of life. A short consideration of the pathology and symptomatology should serve as a background for successful treatment.

The hemorrhages in question usually occur on the surface of the brain most often over the convexity, but at times beneath the tentorium. Sometimes the hemorrhage occurs within the ventricle frequently leading to rupture of the ventricle and to the escape of the blood on to the surface of the brain. It has been shown by Schwartz[1] that within twenty-four hours after these hemorrhages occur, there is distinct destruction of nervous tissue and that this destruction extends but slightly after that caused by the initial hemorrhage. It seems altogether likely that the destruction of nervous tissue by pressure from hemorrhage takes place in less time than twenty-four hours. It has been asserted by some that many hemorrhages are of such slight nature that they cause little or no disturbance and that they go unnoticed but still leave their effects. If we may judge of the effects on the brain from the effects on the retina, as shown by the recent findings of Jacobs,[2] where there was very evident recovery from multiple hemorrhages in the retina without apparent disturbance of vision, we might suspect that such hemorrhages, too, occur on the surface of the brain.

The symptoms of this condition are notably unreliable in the early stages. In the severe case with extreme hemorrhage, death may occur, within a few hours without any symptoms that point to involvement of the brain; and it is well known that it is rarely possible to diagnose the condition within from twenty-four to forty-eight hours by the symptoms alone. In fact, there is doubt in most instances, whether there is any pathologic condition of the brain until convulsive seizures with bulging fontanel and other pathognomonic signs lead one to suspect the seat of the trouble.

It has been urged that the condition is such a serious one that any form of treatment is justifiable; that the presence of a hemorrhage means death or mental deficiency, and that remedial measures of a radical nature are justified on this basis. In respect to mental deficiency there are two points to be considered: The first is that while many assume that the brain defect is in all instances the result of hemorrhage, few have suggested that the hemorrhage may be favored by an existent brain defect. In the present state of our knowledge it would seem to me impossible to distinguish between two such conditions, and I cannot feel that we are justified in assuming that the hemorrhage necessarily is the cause of the defect in all cases or perhaps in most cases. In the second place, my experience has not justified such a bad prognosis. In a condition as hard to diagnose as intracranial hemorrhage, one may always make mistakes, so that it is with some reservation that I record my experience; but certainly on two occasions when the classical symptoms of intracranial hemorrhage have been present and when there was little question in the minds of medical men who saw the patients of the existence of such a hemorrhage, and that of serious proportions, the children have come off practically unscathed so far as their present condition shows, nor was there in either of these cases any operative intervention of any kind.

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[1] Schwartz: Ztschr. f. Gesamt. Neurol. u. Psychiat. **90**: 263, 1924.
[2] Jacobs, M. W.: Retinal Hemorrhages in the New-Born, J. A. M. A. **83**: 1641 (Nov. 22) 1924.

Different operative measures have been suggested to relieve the condition. The decompression operation has, I think, been pretty well discarded. In my own experience it was anything but successful. An attempt to tap the hemorrhage by way of the anterior fontanel is employed by some. In regard to this, there are several objections to be offered. In the first place, one is by no means ever sure from the character of the symptoms as to the location of the hemorrhage. Second, if the vessels are not yet thrombosed, then removal of the blood results only in refilling the area with blood; and third, if the hemorrhage has stopped, it seems hardly possible that the brain substance should have escaped damage.

The latest method of treatment, that of Sharpe[3] and his co-workers, is lumbar puncture. Lumbar puncture necessitates the holding of the child in such a position as definitely to produce venous congestion in the cranial cavity, which, of course, favors further hemorrhage. The technical difficulty involved in lumbar puncture at this age, and especially in these cases when we consider that so many of them occur in premature infants, is such as in the majority of cases to make the findings in the fluid questionable. A recent careful anatomic dissection by Dr. Sanford of the Presbyterian Hospital, Chicago, has shown that not only is the venous plexus within the spinal canal extremely rich at this age, but also the bodies of the vertebrae are practically venous sinuses. When we consider the small size of the spinal canal and especially of the posterior foramina together with the richness of the venous plexus and the richness of the blood supply to the vertebrae, we realize that only the exceptional lumbar puncture can be relied on and that presence of blood in the spinal fluid withdrawn under these conditions is of extremely doubtful value in the diagnosis of intracranial hemorrhage. As to the advisability of using lumbar puncture as a remedial measure, the objections are very much the same as those mentioned in fontanel puncture. In the first place, if there is a large amount of blood within the canal, its removal may simply effect a renewed hemorrhage; and if the hemorrhage has lasted for twenty-four hours, the damage is already done and lumber puncture will do practically nothing to relieve it. But even if all these theoretical objections to the various methods of treatment were present, we still would feel justified in carrying out these measures if the practical results were satisfactory; but such is far from being the case.

We therefore feel that in the present state of our knowledge the best treatment for intracranial hemorrhage is absolute quiet and rest; that the measures up to the present time adopted for the relief of the condition are satisfactory neither from the theoretical nor from the practical standpoint; that the damage is done before the measures can be of value, and that, as a consequence, until we make a diagnosis much earlier than seems at present possible, the best plan to be followed is to see that nothing is done to disturb the quiet of the infant.

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ABSTRACT OF DISCUSSION

Dr. J. B. Sidbury, Wilmington, N. C.: I have studied 130 cases, and sixteen have been definitely proved to be due to hemorrhagic disease. Others had blood in the spinal fluid, and others at necropsy showed hemorrhages in the viscera. There are two factors to be considered: one is the mecha. ical factor and the other is the factor of predisposition in the new-born. It is found that 50 per cent. have a tendency to bleed early; in other words, many new-born children are classified potentially as having hemorrhagic disease of the new-born. As to the damage that may be done in twenty-four hours, I would withdraw such blood as may be withdrawn, and blood can be hypodermically injected to replace the blood withdrawn; but it is a question whether it is not best to leave the child alone. I think that lumbar puncture can be done with reasonable care, and if one can withdraw from the spinal canal from 1 to 3 ounces of fluid, the child is better off without that blood. Transfusion will stop the hemorrhage, and intramuscular injection of whole blood will stop the condition from progressing.

Dr. Joseph Wall, Washington, D. C.: There are two points that should be emphasized. It is first necessary to make a diagnosis before treatment can be instituted, and some of these cases seem to possess a period of latency in which there are very few symptoms manifested. During this quiescent period many minor disturbances may be overlooked by the attendant, especially the obstetric attendant who does not always know how to interpret them. Infants differ in the physiologic irritability of their nerve tissue just after birth and react in different ways to effusions of blood on or into the brain. Symptoms in some cases are aggravated by nursing or crying, during which the spread of nervous impulses may bring about rather characteristic convulsions, overlooked by the obstetrician, but noticed by the mother. I think that Dr. Grulee is rather pessimistic with regard to treatment. We must recognize that intracranial hemorrhage is not a solid, mechanical clot—it is more in the nature of an effusion. The damage to nerve tissue cannot all be done in the first twenty-four hours, else why should the surgeon remove the hemorrhage from a ruptured meningeal artery if the person has irreparable damage within a few hours? I think we should remove the fluid that can be withdrawn through a needle either to save the patient from early death, or from the later living death of mental defectiveness.

Dr. John A. Foote, Washington, D. C.: I have collected operations on about forty cases of intracranial hemorrhage. We frequently do not see the cases until after the early symptoms have developed. Kundrath made the first important studies at necropsy, which should take preponderance of subtentorial bleeding in these infants, and he accomplished this by a special technic in removing the brain. Adair recently confirmed his work, and Wilson has had identical findings. As to the eye symptoms, Paul has made observations in regard to early hemorrhage in the retina, and Kearney confirmed Paul's work. Undoubtedly, interest in his condition has been generally awakened. Many infants have no early symptoms, but I regard the cessation of nursing once it has begun, perhaps on the second or third day, of utmost symptomatic importance.

Dr. Jules M. Brady, St. Louis: Those who have been treating this condition the last eight or ten years by spinal drainage will not agree with Dr. Grulee. It is true that lumbar puncture is difficult in young infants and, at times, as a result of injury to the delicate veins, red blood runs through the needle. But when one gets port wine looking fluid, as described by Dr. Foote, there can be no mistake. Sharpe has called attention to the fact that in 10 per cent. of punctures no fluid is obtained—a dry tap. During the last few years I have been performing cistern puncture, which is a better procedure. It is all right to theorize, but, as in infant feeding, it is necessary first to find out what methods were successful and then attempt to discover the proper explanation. Intracranial hemorrhage should be thought of in every baby acting abnormally. The failure of the baby to nurse properly is a frequent symptom; bulging of the fontanel is not common. O'Brien and Ehrenfest have demonstrated that the condition does not depend on the hemorrhagic disease, but that there is a tear in the falx or tentorium. In some instances, untoward symptoms depend on an edema of the brain. Favorable results following subarachnoid drainage come from relief of the increased intracranial pressure; it is not supposed that we remove all the blood. Spinal drainage will save lives and prevent after-consequences in a large percentage of these infants.

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[3] Sharpe and Maclaire: Am. J. Obst. & Gynec. 9:452, 1925.

Dr. Effa V. Davis, Chicago: I should like to give a word of advice as to the etiology of cranial hemorrhage in the new-born from the obstetrician's point of view. Many times the complication arises from toxemia that has existed in the mother and fetus for weeks before birth. Toxic matter floating in the blood weakens the blood vessels of the child—renders their coats friable, and they yield more readily to any extra strain put on them at the time of birth. If we can prevent toxemia in the mother, I believe we may check the frequency of cerebral hemorrhages in the new-born. Edema of the brain occurring from the same cause may be mistaken for hemorrhage. In regard to nursing, a toxic child will often refuse to nurse or do so only at long intervals and still not suffer from a hemorrhage. The prevention of oversized babies will check the tendency of serious trauma of the cerebral vessels also, as greater pressure must be expended to deliver a large child than a small or moderate sized one, though the normal blood vessels in a fetal brain will withstand an enormous amount of compression. The control of diet and exercise to eliminate toxemia in pregnancy or oversize of the fetus will do much to avoid trauma of the cerebral blood vessels of the new-born.

Dr. John A. Foote, Washington, D. C.: I did not say that the child does not nurse. I said that the child commences to nurse vigorously, and then, about the second or third day, the child stops nursing.

Dr. S. J. Wilson, Brooklyn: I must disagree with the neurologist who said that the most frequent site of intracranial hemorrhage in the new-born was around the longitudinal sinus. In a series of forty-nine cases reported by me there were only two in which the hemorrhage was traced to the longitudinal sinus; in one case a blood transfusion was given through the sinus and the needle punctured the inner wall of the sinus, and the blood was injected into the posterior part of the right lobe. In most of the other forty-seven cases the hemorrhages were subtentorial, subdural (cortical) and intraventricular. I agree with Dr. Foote that in some of the subtentorial cases, especially with slow bleeding, one will not get the symptoms until the fifth day. It takes time for enough blood to run down to the medulla to give signs. I cannot agree with Dr. Grulee about leaving these children alone. Some obstetricians do not agree with our method of treatment. They leave the children alone, but the results are not as good as when we do lumbar puncture. The child will recover more quickly and with fewer after-effects. Three cases with symptoms of intracranial hemorrhage at birth treated by lumbar puncture were observed for a period of three years, and have so far not shown any further signs; two clinically similar cases, without lumbar puncture, observed for a period of two years, have shown signs of intracranial injury. The dangers of lumbar puncture, under proper precautions, and with a good assistant holding the baby, are nil. Lately, we treated one case with cistern punctures. It was a case of myelomeningocele of the lumbosacral region. Every time we went in, we obtained fluid. The necropsy showed no injury to the cord or medulla at the site of punctures.

Dr. Herman Schwartz, New York: If one analyzes carefully the results obtained, they are difficult to evaluate. No one has had such a large series of cases that he can say positively one thing or another. I think that brain edema has a great deal to do with the symptoms in the new-born. One can observe the eye changes, and also make an examination of the static labyrinth. I have had the cooperation of an otologist, and have been able to prove a cerebral condition. In regard to treatment, I do lumbar puncture sometimes. I think I get blood. How often has that occurred in the fifty cases of Dr. Wilson? How often have we had blood in the spinal fluid with cerebral hemorrhage? For fifteen years I have been doing lumbar puncture in these children. In most instances I have not been sure of the findings. I do not know whether I have got blood due to hemorrhage of the brain. I do not know whether I agree with Dr. Grulee or not. I shall continue making lumbar puncture, but I have not really felt that I have helped these children. I do not think it does any harm. In some cases in which I thought there was cerebral hemorrhage, the convulsions stopped and the child got well, and in other cases they have not stopped and the child has not got well. I do not think that we should fool ourselves that we are doing a great deal by doing lumbar puncture. I was enthusiastic about Cushing's work, and I did four operations according to his technic. The first one gave a wonderful result. There was a cortical hemorrhage and the clot was drawn out. The child had other hemorrhages and died later. In the other three cases we did not find the hemorrhages. I would not advise this operation. In doing lumbar puncture I use a very fine needle. If it is used with care one can generally get fluid, but if one does not succeed the first time, I think that one should stop.

Dr. C. G. Grulee, Chicago: I believe these cases are rarely caused by hemorrhagic disease. I think they are nearly all traumatic in origin. Dr. Sidbury said it would be very easy to do lumbar puncture without increasing venous congestion within the cranial cavity. Since it is necessary to bend the infant as far as one can to get the needle into the spinal canal, I cannot understand the basis for his statement. Dr. Wall speaks of minor disturbances and compares the adult brain with the brain of a new-born child. It is easier to handle the adult brain because there is some chance to relieve pressure before damage is done. The brain of the new-born infant is jelly-like in consistency, and hemorrhage into this soft material would be far more destructive than into the brain of an adult. Dr. Grinker begs the question when he presupposes that these are primarily hemorrhages and not primarily defective brains. We cannot prove that these brains are not primarily defective with secondary hemorrhages. When one inspects these lesions, one can readily see that they are a miniature of the rest of the brain. They retain the conformity of the cerebral convolutions. Of course, I am speaking of porencephaly. The power of recuperation is only in the glia cells and not in the nervous tissue. Dr. Foote regards the fact that the infant starts to nurse and then stops as pathognomonic. I would not be willing to accept this without reservation. I do not think that this means only intracranial hemorrhage. Cistern puncture, I think, should be helpful, but I have not tried it. It might be of some value, not from the standpoint of treatment, but from that of diagnosis. I still think the damage is done by the time the symptoms suggest the presence of the disorder. I have not heard anything today that contradicts that point. With edema of the brain I have had very little experience. My colleague believes in lumbar puncture. In one such case he obtained, first, fluid; second, blood, and the third time, fluid. At necropsy, edema of the brain was found. The brain was so swollen that the cortex was flattened against the skull. There was great edema, but lumbar puncture did not relieve it. So far as pathologic studies go in Little's disease, I have had no experience. I do not know anything about labyrinthine tests. Dr. Schwartz's remarks about the significance of blood in the spinal fluid are certainly in accord with my experience. Some one advised the use of a fine needle. I abandoned that practice for the reason that if a fine needle is so limber that one loses the direction of the thrust, one may frequently go to one side. A needle must be large enough of caliber or one will have difficulty. I use one of medium caliber because of this.

ALLERGY: A NONSURGICAL DISEASE OF THE NOSE AND THROAT [*]

GEORGE PINESS, M.D.
AND
HYMAN MILLER, M.D.
LOS ANGELES

The reaction of the mucous membrane lining the respiratory tract produces a characteristic clinical picture in a certain definite group of persons who exhibit an abnormal sensitivity to protein substances. Such individuals are separated from the normal by the appellation "allergic." As the work of Adkinson,[1] Cooke and Vander Veer [2] and Spain and Cooke [3] shows, heredity is an important factor in explaining the existence of such a group of individuals, which may be estimated as consisting of about 10 per cent. of the population, a group sufficiently large to merit recognition, for undoubtedly its members come under the almost daily observation of the practitioner who limits his field to the nose and throat. Its proper recognition is dependent on a knowledge of the manifestations of allergic phenomena.

Limiting ourselves to the mucous membrane lining of the respiratory tract, we find enumerated as of allergic etiology, hay-fever, seasonal and perennial, vasomotor rhinitis, acute and chronic, and bronchial asthma. These clinical distinctions of allergic phenomena of the upper and lower respiratory tract are purely symptomatic, are restrictive in their application, and tend to obscure the true cause of the complications and sequelae which so often supervene. Immunologically and pathologically they are the same process, nor do we intend to distinguish between them in our discussion. When the respiratory mucous membrane of an allergic individual is exposed to the proteins to which he is sensitive, a characteristic reaction results. Whether the protein is inhaled, thus coming into direct contact with the mucous membrane, as is the case with pollen proteins, and the proteins of the animal hairs and feathers, or, what is often unrealized, ingested in the form of food proteins, the reaction is the same. In other words, whatever the source of the protein, or whatever its means of reaching the respiratory mucous membrane, we find a characteristic picture.

Typically, as Montgomery [4] states, there is a very marked redness of the pharynx with hyperplasia of the lymphoid tissue both medially and laterally with considerable secretion of mucus. In the epipharynx, the mucous membrane is frequently congested and weeping; in the nose, swollen turbinates are quite constantly present and the mucous membrane may be a dull red, and at other times pale, flabby, soggy in appearance, and dripping with thin, watery secretion. The same vasomotor congestion extends, at times, up the eustachian tubes and invades the middle ear, giving here dusky drums which cannot be differentiated from any tubal or middle ear congestion of a low grade bacterial type. Characteristically, then, we have, in any portion of the respiratory tract, a mucous membrane lining in which the lymphoid tissue is hyerplastic, the mucous glands oversecreting, the blood vessels engorged, and the tissue, as a whole, swollen, and intumescent even to the extent of polyp formation.

The description given above is not only that of an acute case of so-called "seasonal" hay-fever, nor is it a description of chronic, periodically recurrent so-called vasomotor rhinitis. It is a description of both an acute and chronic allergic manifestation without complications in the lining mucous membrane of the respiratory tract. It is the picture that one often sees in children whose only complaint is obstruction to nasal breathing, excessive nasal discharge, and frequent colds in the head. It is the basis of the picture that we see in adults and especially in those adults who, in addition to the symptoms described above, have reached the age at which they can also give a history of many operations on the nose and throat and more particularly on the nose. These include innumerable removals of polyps, amputations, excisions and crushings of turbinates, more or less radical operations on the nasal sinuses, and other procedures, all aimed at the same goal, viz., the establishment of free drainage from an infected and obstructed cavity, a logical procedure in view of the diagnosis of the rhinolaryngologist—chronic sinusitis. What has been the sequence of events from childhood into adult life which has led the rhinolaryngologist to his diagnosis of chronic sinusitis, for it is only this diagnosis which justifies for him the numerous operative procedures enumerated above?

Todd [5] reviews this sequence of events as follows:

> During each attack of hay-fever, swelling of the turbinates takes place, causing defective drainage, secretion occurs, infection is added thereto and we have present during pollinosis, ethmoiditis and sometimes pansinusitis. Repeated attacks of pollinosis may result in a persistent lesion, and thus the patient may develop chronic ethmoiditis, sphenoiditis, frontal sinusitis or pansinusitis often accompanied by persistent swelling of the turbinates and especially of the middle turbinate.

Substitute for or add to the word pollinosis "ingestion of protein and exposure to animal emanations," and we have a rational explanation for the rhinolaryngologists's procedures. Although the rhinolaryngologist, in view of the present state of our knowledge concerning allergy, would not think of performing an operation during an acute attack of what he knows and recognizes as "seasonal" hay-fever (Todd's pollinosis), he persists in operating when the condition has become chronic or when, there being no seasonal variation, he forgets that the respiratory mucous membrane may respond to foreign proteins ingested through the gastro-intestinal tract at any time of the year or throughout the year in exactly the same manner as to those derived from the pollens coming into contact with the respiratory mucous membrane only during the pollen seasons. Infection, in many instances, is thus not the primary cause of obstruction to sinus drainage, and as a result, amputation of turbinates, straightening of septums, and opening of holes into the bone does not insure a cure of symptoms. The sensitized mucous membrane is still present, and the proteins active in producing allergic phenomena in this membrane have not been eliminated.

It is not unexpected, therefore, that a critical examination of operative procedures in the respiratory tract should be productive of such adverse findings as are here presented in a group of 834 patients who have been under observation for various manifestations of allergic phenomena of the respiratory tract (recorded on the accompanying chart). In this group, every member gave one or more definite reactions to some foreign protein by the usual scratch method of testing, and in the course of the study, a definite statement was obtained as to the operations performed on the nose or throat. True, not all the operations so enumerated were done for the relief of allergic symptoms. This we believe to be beside the point, as relief or prevention of allergic symptoms is as well to be expected as in those cases in which this object was held in view in so operating. Considering that all these patients came for relief of symptoms after the operative procedures, we must regard the operative procedures as then having failed in preventing, allaying or curing such symptoms.

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[*] Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Adkinson, June: The Behavior of Bronchial Asthma as an Inherited Character, Genetics **5**: 363 (July) 1920.

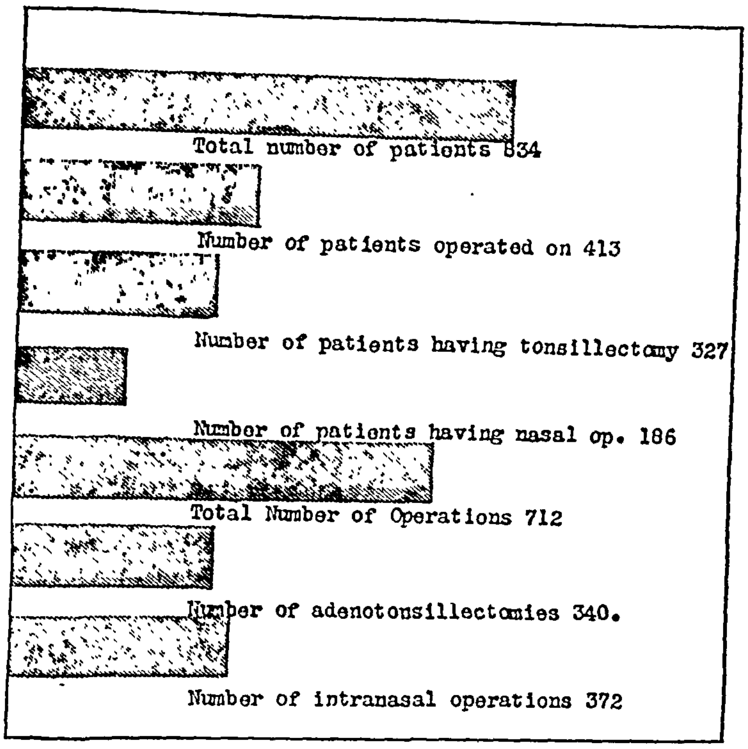
[2] Cooke, R. A., and Vander Veer, A., Jr.: Human Sensitization, J. Immunol. **1**: 201 (June) 1916.

[3] Spain, W. C., and Cooke, R. A.: Studies in Specific Hypersensitiveness, IX, The Familial Occurrence of Hay-Fever and Bronchial Asthma, J. Immunol. **9**: 521 (Nov.) 1924.

[4] Montgomery, C. H.: Personal communication to the authors.

[5] Todd, F. C.: Ethmoiditis as a Common Sequel of (Never the Cause) of Pollinosis (Hay Fever), J. A. M. A. **59**: 1090 (Sept.) 1912.

Among the 834 patients, there were 413, or 49 per cent., who had had operations in the region under consideration. These 413 had undergone 704 operations on the nose and throat, or 1.7 operations per person. The operations were divided into 327 on the throat—adenotonsillectomy being considered a single operation—and 377 on the nose. The 377 nasal operations were performed on 186 patients, giving an average of slightly more than two nasal operations for each patient. The highest number of operations on a single patient was eighteen, terminated by a double radical operation on the frontal sinus. Lintz[6] has truly said, in discussing operations in allergy, "I know of no anatomical portion of the body that is operated upon so much as the nose, but the limit of operations is reached when you come to consider the nose in asthmatics." The same author[7] gives a group of 300 patients showing allergic manifestations, of whom fifty-six, or 18.7 per cent., had had operations on the nose and throat. Of these, thirty-three, or 59 per cent., were on the throat, and twenty-eight, or 41 per cent., on the nose, no account being made of multiple operations in a single individual, "with not a single patient cured by any of these operations.' Kahn[8] also gives a group of ninety-four cases of allergy, thirty-three in which operations were done on the nose and throat without relief. With Selfridge,[9] he agrees in condemning operative procedures on the nose and throat for the relief of allergic manifestations.



Number of operative procedures on the nose and throat of allergic patients.

In addition to the fact that the patients so subjected to operation seldom if ever obtain relief, we have also the untoward sequelae of operative procedures to consider, as is to be expected in so large a group of operative cases. Of course, many of these untoward sequelae must be classed as accidents or the result of unskilful surgery and, as such, provide no argument against operations. However, such undesirable results are multiplied with the multiplying of the indications for operations, and it is on this basis also that we urge the removal of allergic symptoms from the category of indications for operations on the nose and throat.

CONCLUSIONS

1. Allergy of the respiratory mucous membrane is a clinical entity.

2. When the etiology is obscure and the clinical picture is that of the resultant complications, operative procedures are extremely common.

3. In a group of 834 allergic patients, there were 704 operative procedures on the nose and throat without relief, there having been no removal of the offending allergen.

4. Since there is an increasing risk of untoward operative sequelae with so large a number of operations, we urge that allergic manifestations be classified as nonoperative conditions of the respiratory tract.

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ABSTRACT OF DISCUSSION

Dr. Andrew A. Eggston, New York: Being a pathologist in an eye, ear and throat hospital, I have had quite a large experience in allergy and its relation to the nose and throat. In fact, most of these cases at our hospital are studied cooperatively in order to determine what is best to do for the case. Undoubtedly, there are some clinical syndromes that are manifestations of pure uncomplicated allergy cases of the nose, throat and bronchial tubes, and as allergy is a general condition, or a local manifestation of a general reaction, most physicians will agree that operations in these cases will not produce beneficial results. However, the fundamental explanation of allergy has not been developed, and undoubtedly there must be some pathologic condition of the membranes in the nose and throat, bronchial tubes, or in the gastro-intestinal tract that permits the development of sensitization to a foreign substance. The whole question of the basic causes of allergy is in quite a chaotic state. It may be a reaction of the parasympathetic nervous system, and some nose and throat men seem to think that that has a great deal to do with it. Certainly, operation on the nose and throat would hardly be indicated unless there are some associated complications. I think that the nose and throat men generally recognize this, and I do not think that they are inclined to operate on the nose and throat for a simple case of hay-fever or a simple case of asthma. On the other hand, with the constant irritation of the mucous membrane of the cavities of the nose, complications develop, such as empyema and then surgery is indicated and is an absolutely essential procedure in these cases. The treatment of nose and throat infections in asthma, to my mind, is very important. In fact, the treatment of asthmatic patients involves a great deal more than simply the treatment by foreign proteins. I think one should take into consideration the general status of the patient's health and the relief of any focal infections. If it is necessary to take out the tonsils to improve the general condition of the patient, I think it is perfectly justifiable. While there is point to an argument against surgical procedure in purely allergic cases, on the other hand, nose and throat operations are essential to relief in some cases. Undoubtedly, all cases of asthma and hay-fever should be studied in consultation between the immunologist and the internist in order to obtain the best results.

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[6] Lintz, W.: Bronchial Asthma, M. J. & Rec. **119:** 287 (Nov.) 1924.

[7] Lintz, W.: Lack of Operative Indications in Asthma and Other Forms of Allergy, Ann. Surg. **79:** 917 (June) 1924.

[8] Kahn, W. H.: Nasal Operations in Bronchial Asthma, J. A. M. A. **82:** 536 (Feb.) 1924.

[9] Selfridge, G.: Disturbance of Metabolism and Its Relation to Certain Disorders of the Respiratory Tract, Laryngoscope **32:** 243 (April) 1922.

DR. GEORGE PINESS, Los Angeles: Dr. Eggston's discussion brought out the fact that nasal surgery should be done when indicated. I say the same thing in my paper. Because a man has a sinusitis is no indication why he should be treated with protein extracts and the sinusitis remain. I believe that when surgical procedure is indicated, it should be done, regardless of the asthma or the hay-fever. What I attempted to bring out in my paper was this—that asthma and hay-fever are usually allergic and not surgical conditions. Some patients, regardless of surgery, are not made better. I am not attempting to take the work from the nose and throat men, but I feel that with cooperation between the immunologist and the otolaryngologist and the otorhinologist, the patients will be better taken care of than they are today by either one of us singly.

THE REVISION OF THE UNITED STATES PHARMACOPEIA *

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Dr. Lyman Spalding and his associates, who originated the United States Pharmacopeia, would be astonished, were they here today, to learn that it is necessary to point out its advantages to this audience since it was controlled by physicians alone during the first thirty years of its development.

We are prone to assume that the Pharmacopeia concerns only pharmacists, and that we have no interest in the details of the work of revision. This is an unfortunate attitude, detrimental alike to pharmacy and to medicine.

Many pharmacists and chemists give their best efforts to the development of the Pharmacopeia, they are indefatigable in their efforts to secure high standards of purity of official drugs, and it is patent to all who have given the subject careful study that they take far more interest than most physicians in the work of revision.

It is impossible, however, to develop a pharmacopeia which represents everything that is best in medicine without the earnest cooperation of many clinicians, pharmacologists, chemists and pharmacists. It is the duty of the clinician and the pharmacologist to select those therapeutic agents which are indispensable in the treatment of the sick. It is just as necessary to exclude those substances which are not indispensable, because when an unnecessary drug is used, it displaces a better one, obviously to the disadvantage of the patient and the reputation of his physician.

The time at my disposal permits a brief discussion of only a few of the more important features of the Pharmacopeia,[1] including the scope, chemical tests that assure the purity of official chemicals, and the chemical and biologic assays that assure, so far as possible, uniformity of activity of vegetable and animal drugs and preparations.

It is axiomatic that one cannot understand an institution that has had a century of development unless one knows something of its history, and the physician will find it profitable to peruse the outlines of the history of the Pharmacopeia with the ten revisions that have been made.

The physician must know something of the Pharmacopeia in order to avail himself of the advantages that it offers him, but this fact is often ignored, and a great many physicians are lamentably ignorant concerning the work. An intern in Bellevue Hospital told me that many young graduates of medical schools hardly know that there is such a book, and that they are frequently embarrassed by their lack of information when they hear others discuss official drugs and preparations as distinguished from those which are proprietary. It is the duty of all teachers who are concerned with therapeutic instruction to assist in familiarizing students with the Pharmacopeia.

Stress should be placed on the use of official names of drugs and preparations, especially in prescription writing. The Pharmacopeia contains a wealth of information for the student of chemistry and medicine and for the prescription writer. This includes suitable abbreviations, solubilities in various vehicles, and doses. The physician will often find it convenient to know in what form suitable for dispensing a given drug is official. This information is given in every case in which a drug enters into an official preparation.

The physicians (including all who have the title M.D.) of the subcommittee on scope are responsible for the selection of the therapeutically active substances that have been admitted; the pharmacists are responsible for the selection of those articles which are admitted because of their being pharmaceutical necessities. The latter include reagents for testing chemicals, solvents, and menstruums which are necessary in various pharmaceutical processes—in short, those substances for which standards must be provided but which the physician does not prescribe directly.

The United States Pharmacopeia of 1890 contained 994 titles, but the forthcoming revision will have only about two thirds as many, exclusive of those which were admitted as pharmaceutic necessities. It is the purpose of the Committee of Revision to admit only those drugs which are worthy of careful study by the physician, and the Pharmacopeia will be increasingly important as a reference work in medical colleges and for the clinician. The Committee of Revision has erred on the side of liberality, if it has erred at all, rather than on the side of conservatism in selecting official drugs; and the 630 official crude drugs and preparations that have been included because of their therapeutic value exceed the list of useful drugs selected by the Council on Pharmacy and Chemistry of the American Medical Association, which is designed to include every essential therapeutic drug, irrespective of its origin and whether it is proprietary or nonproprietary.

A mere comparison of numbers alone would be of little value, however, since the two lists might overlap but little. As a matter of fact, the Council's list of useful drugs contains only five, exclusive of vaccines, antimeningococcus serum and mixture of diphtheria toxin and antitoxin, which will not be in the Pharmacopeia either in the identical form in which they are listed in "Useful Drugs" or in an equivalent form. "Useful Drugs" contains in addition a few pharmaceutical preparations, such as liniment of ammonia and spirit of ether, which are not in the Pharmacopeia.

One who follows the work of the Council on Pharmacy and Chemistry and that of the Committee

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* Read before the Section on Pharmacology and Therapeutics at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] This paper is concerned mainly with the forthcoming Pharmacopeia, which will be issued shortly, and the tenth revision is meant unless another is specifically mentioned.

of Revision of the Pharmacopeia will find that the Pharmacopeia and the Council's list of useful drugs constantly tend to become a unit so far as the selection of therapeutic agents is concerned. The physician who disregards the conclusions of two groups which have studied this question intensively assumes no light responsibility when he uses unofficial drugs without having studied their actions with great care.

It has long been the boast of the thoughtless physician that he uses anything whatever if he believes it to be to the advantage of his patient. Many believe that this shows a broad spirit and a liberal attitude whereby they are freed from the shackles of conservative medicine, and that they are able to choose their therapeutic agents more wisely than he who limits himself to the use of official drugs. It is worth while, however, to inquire into the correctness of the assumption that one treats his patients to greater advantage when one selects one's drugs wherever they may be found.

Section 6 of Chapter II of the "Principles of Medical Ethics" of the American Medical Association says: "It is unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way."

Nothing could be further from my mind, or that of any sensible man, than the attempt to limit the freedom of action of the clinician who bases his choice of drugs on accurate knowledge, regardless of the source of that knowledge; but I do condemn the callousness of those who use unofficial drugs on hearsay testimony alone—often that of the interested proprietor.

I had occasion recently to examine the literature of a proprietary preparation which in 1921 was reputed to consist of two well known hypnotics. I find that it is now described as consisting of equal parts of barbital and a newly discovered hypnotic. No reference was made in either of two recent articles to any change in the formula, though the papers of others who had used it when made by the older formula were cited. No such confusion concerning official drugs will occur.

A recent examination of numerous commercial preparations of pituitary showed that some were only one-tenth as active as they were supposed to be; some were five times as active as represented, or fifty times as active as the weakest. Such variability in activity of the official preparations of pituitary will be avoided.

The Pharmacopeia provides rigid standards of purity of drugs for which chemical tests are available. These tests have been studied with extraordinary care, and they suffice to insure a high degree of purity, and no official chemical may be dispensed legally if it contains any harmful impurity. Absolute purity is seldom attainable in practice, and pharmacists and chemists have devoted an enormous amount of time and care to the methods of preparing official chemicals which are free from more than traces of impurities that would be harmful in large amounts. Traces of impurities in drugs are not injurious to the patient. The manufacturers of many proprietary preparations observe no limitations except those that they choose to impose, and these may be changed at will.

It is impossible to give in a few words an adequate idea of the extraordinary care and the amount of labor that have contributed to make the Pharmacopeia a model of its kind. The Committee of Revision has had the assistance and cooperation of a large number of workers in many fields, including several of the bureaus of the federal government, research institutes, and chemical factories. Certainly, few books represent an equal amount of exact work, and few so nearly represent the sum of human knowledge within the scope of the work. A glance at the many pharmacopeial tables will afford an idea of the work that has been done.

The biologic tests insure, as nearly as possible, the uniform activity of various drugs for which no satisfactory chemical tests are available. It is admitted freely that the biologic tests are not entirely satisfactory; but they are the best that human ingenuity has been able to devise after long and careful study, and efforts to improve these methods are being made constantly.

The digitalis bodies are standardized by comparing their activity on the frog's heart with that of ouabain; but there was no pure stable digitalis principle of uniform composition that was readily available as a standard until the Bureau of Chemistry perfected a method of crystallizing ouabain with a constant number of molecules of water of crystallization. The Pharmacopeia provides biologic tests for aconite, antitoxin, arsphenamin, cannabis, cod liver oil, the members of the digitalis group, epinephrin, ergot, and solution of pituitary.

There is a fairly widespread belief that the therapeutic action of the infusion of digitalis differs qualitatively from that of the tincture; whatever may be said of this view with reference to the official infusion, it is worthy of note that several manufacturers print directions on the labels for making the infusion from the fluidextract. It is also commonly believed that the infusion of digitalis decomposes very rapidly; and while one cannot say that rapid decomposition of the infusion never occurs, one may feel confident that the official infusion will not decompose during a period of a week if it is kept cool and given ordinary care. The method now official for preparing the infusion of digitalis insures greater uniformity of activity, and this removes one of the greatest objections that has heretofore been urged against its use.

One hundred and ninety-one articles that were official in the ninth revision of the Pharmacopeia have been dropped, and fifty have been added. The Latin titles of forty-five have been changed more or less.

Among the more important articles that have been added are acetylsalicylic acid, arsphenamin, barbital, epinephrin, procain hydrochlorid, neo-arsphenamin, quinidin sulphate, and mild and strong silver proteinates. It would hardly be correct to speak of any of the more important articles that have been dismissed, for, obviously, those that were dismissed are deemed of least importance.

I do not believe that any progressive physician will be embarrassed in his efforts to uphold the Pharmacopeia by the loss of any articles that have been dropped. A few may protest on discovering that a familiar drug is no longer official, but a careful survey of the list of official substances will show that the Pharmacopeia contains better drugs of every class than those that were dropped. Diacetylmorphin (or heroin) has therapeutic value, but Congress has forbidden its manufacture in this country, and it is the consensus of opinion that it is fully replaced by morphin and codein, and a great many believe that heroin has done more harm than good. Morphin and strychnin, the alkaloidal bases, were dropped because these alkaloids are almost invariably used in the form of one or another of their salts. I do not believe that one drug or preparation that was dropped deserves a place in the Pharmacopeia.

One may be surprised to discover tincture of opium among the list of preparations that have been dropped. This is little more than a change in the title, however, for the tincture of deodorized opium, so called, of the ninth revision is admitted in place of the tincture that was formerly official. The actions and dosage are identical with those of the tincture that has been dropped.

The Committee of Revision was greatly concerned with the question whether whisky and brandy should be admitted. After long discussion they were dropped from the ninth revision, and after an equally protracted consideration they were admitted to the tenth. Their admission was almost uniformly favored by those members of the subcommittee on scope who are in practice, and almost uniformly disapproved by the laboratory workers. The significance of this is left to individual consideration.

There are comparatively few important changes in the strengths of official preparations which retain their former titles. Among the more important is that of the ointment of yellow mercuric oxid. It was formerly employed extensively for the destruction of pediculi, whereas it is now used mainly in ophthalmic practice. The ointment formerly contained 10 per cent. of yellow mercuric oxid, but that of the forthcoming revision will contain only 1 per cent. This serves to illustrate the necessity for an acquaintance with the Pharmacopeia on the part of the physician.

Fragmentary as this discussion is, it will serve, I trust, to call attention to the necessity of a better acquaintance on the part of physicians with the Pharmacopeia, and to some of the ways in which it is of value to them.

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ABSTRACT OF DISCUSSION

DR. E. FULLERTON COOK, Philadelphia: The essential phases of the new revision have been covered thoroughly by Dr. Hatcher. Possibly, however, a word about the national status of the Pharmacopeia might be interesting. It is different from all other pharmacopeias in that an incorporated body with no direct governmental affiliation controls and revises it. When the new book appears decennially, it is adopted by the government of the United States as the official standard for medicines. The independent position of the Pharmacopeia has, however, certain advantages. Through its nongovernmental status, it is able to bring into the revision many interests. The Surgeon Generals of the Army, the Navy and the Public Health Service, through the Hygienic Laboratory, the Bureau of Chemistry of the Agricultural Department, the Bureau of Standards, and many national and state medical and pharmaceutical associations and scientific workers in university and private laboratories, are thus brought into the revision work. One striking feature which Dr. Hatcher mentioned and which should be stressed is the fact that the scope of the new Pharmacopeia, the Tenth Revision, has been determined by the physician members of the committee, so that the book should have the unqualified support of the medical profession. Another feature of importance in the new Pharmacopeia is the effort that has been made to insure uniformity of therapeutic action. Rubrics, or a definite degree of purity or activity, with tests and assay methods have been established for chemicals, drugs and preparations whenever these have been practicable. To insure greater uniformity in biologically standardized products, the Bureau of Chemistry has offered to prepare and distribute free to pharmaceutical manufacturers the U. S. P. physiologic standards for digitalis and the digitalis group of drugs, epinephrin, pituitary extract, ergot and cannabis. With all these safeguards provided for pharmacopeial chemicals, drugs and preparations, and with their quality enforced by the Food and Drugs Act, physicians should have confidence in U. S. P. products and insist on having them when prescribing. The Health Committee of the League of Nations is also interested in the establishment of bio-assay standards and is holding a conference this summer to discuss this question. Our new national standards should have an important influence on those to be adopted internationally. The U. S. Pharmacopeia has also been extensively used in the Spanish-American countries. For twenty years a Spanish edition has been issued and is official in Cuba. The U. S. P. translation is now under way through the cooperation of the University of Havana and should be available early in 1926. The exact date when the new Pharmocopeia will be available is not yet known, but the board of trustees has announced that it will become official in the United States, Jan. 1, 1926. A few years ago the Pharmacopeia of the United States was translated into Chinese, and is now available in China for those who have been trained in modern medicine. This was made possible largely through the cooperation of St. Johns University of Shanghai, working under Mr. Carl Crow.

DR. H. C. WOOD, Philadelphia: I do not think that the medical profession realizes the amount of medical investigation represented in this book. It understands probably the necessity of considerable experimental work on the part of the chemist and the pharmacist in modifying the formulas; but the amount of therapeutic and pharmacologic research that enters into the make-up of the Pharmacopeia is known to the majority of the medical profession. I might, perhaps, refer to one or two specific instances. The Committee on Ointments wanted to modify the formula for the well known zinc oxid ointment, and the Therapeutic Committee, of which Dr. Sollmann was chairman, made an elaborate study which involved communication with nearly all the prominent dermatologists of the country as to which ointment base was preferable. Another very interesting point brought out concerns the activity of arsenic. Some may have seen the paper of Dr. Schultz in which he showed that the absorption and therefore the therapeutic activity and toxicity of arsenic depended largely on the fineness of the powder, and in view of this work the Pharmacopeia Revision Committee has put a limit on the fineness of arsenic. In the future, it will probably be found that better results are obtained from the arsenic that henceforth will be official than were obtained in the past. I could go on and multiply instances of this sort which have involved very important pharmacologic research in improving the Pharmacopeia. There is one other point that I should like to emphasize. Dr. Hatcher mentioned it, but I think that it cannot be overemphasized, and that is the importance of the use of official names. Manufacturers who sell their products under trade names are in no way bound to furnish products of standard purity; they modify their formulas at will, sometimes very considerably. These may have greater or lesser amounts of impurities, and whenever one orders a product by a proprietary name, one has no guarantee of the quality of drugs or even of the kind of drugs that one's patient is going to receive, except the honesty of the manufacturer. On the other hand, when a drug is ordered by an official name, the druggist must dispense a drug that corresponds to the standards laid down in the Pharmacopeia, or he is liable to prosecution by the federal government, and, in nearly every state in the Union, also by the state authorities.

Plan of Organization of County Health Department.—In a county in which the largest city does not exceed 50,000 population it is usually desirable in the interest of efficiency and economy to form a combined county and city health department under the administration of one health officer. Even where local conditions preclude such a combination, the county health officer should have general advisory authority over all health work in the county. Every county health officer should be required to observe and enforce all state and local health laws, ordinances and regulations throughout his jurisdiction.—Parran, Thomas, Jr.: *Pub. Health Rep.* 40:984 (May 15) 1925.

ELECTROCOAGULATION AND RADIATION THERAPY

IN MALIGNANT DISEASE OF THE EAR, NOSE AND THROAT *

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Electrocoagulation in the treatment of malignant disease of the ear, nose or throat, from its nature, will have only a very limited field of application.

ELECTROCOAGULATION

1. Electrocoagulation consists in the destruction of the disease by coagulation of the tissues. The heat is caused by the resistance in the tissues to the flow of the high frequency electricity.

2. It differs from the destruction by cautery; it is not a transmitted heat, but is heat generated in the tissues and extends to a greater depth than that of the cautery.

3. It destroys all kinds of tissue in its path, and, therefore, cannot be used where blood vessels, nerves, bone or other essential tissues must be preserved.

4. It is a painful procedure and must be used with either local or general anesthesia.

5. If the area to be destroyed is supplied by large blood vessels, these arteries must be ligated in advance for fear of a secondary hemorrhage, when the slough separates.

6. There is always a sloughing process which will continue for several weeks or months, until all the dead tissue has been thrown off.

7. If bone has been destroyed, it will suppurate, and generally separate as a sequestrum.

8. Electrocoagulation can be used wherever the cautery can be applied and often also in very small areas where only a single wire can be introduced.

9. It must be used under the guidance of the eye, and much skill is required in order that the tissue may be destroyed to the proper depth.

10. Tissue can be destroyed by plunging the needle to any depth, but this demands skill, experience and an accurate knowledge of anatomy.

RADIATION

Radiation, on the other hand, has been used extensively with good results. Radiation can be used to advantage preceding operation, following operation or independent of operation, and should always be used in conjunction with electrocoagulation.

Radium is preferable to roentgen rays when it can be brought into contact with the malignant disease, or safely inserted into the lesion sufficient to irradiate evenly all of the malignant tissue and for a sufficient period of time to destroy all malignant cells.

The roentgen rays, on the other hand, are preferable when the malignant disease lies more than 2 cm. in depth, or when the malignant disease lies beyond healthy tissue which must be preserved. Generally, the two forms of radiation can be combined to advantage, but rarely should they be directed through the same surface. The laws governing the values of each form of radiation must be kept in mind constantly.

In the use of either of these forms of radiation, it is our custom to bring the radiation in the diseased area within a few days or a week to 100 per cent. of an erythema dose (saturation point), by daily treatments, and then keep it at this "saturation point" by subsequent fractional dosage, for a period of from ten to fourteen days. I have described this saturation method in more detail in another paper.[1] No positive rules can be laid down that are applicable in all cases, except that one first of all must consider the general condition of the patient, and the preservation of the essential tissues and organs. All radiation must be carefully measured, and the depth values and cumulative effects carefully calculated. Otherwise there will be insufficient radiation, and the treatment will fail; or there will be an excessive effect, and damaging results will follow.

MALIGNANT DISEASE OF THE EAR

Epithelioma of the auricle, if treated while it is confined to the skin, may be treated, as is any skin cancer, by electrodesiccation and radium, or roentgen rays, and practically all should get well. If the disease has extended into the cartilage, radiation alone will usually fail; but if radiation is associated with thorough electrocoagulation, cure should follow, provided the disease has not extended into the bone.

Primary malignant disease in the middle ear is rare. Junod[2] reports only six cases in 45,000 ear patients at the Basel clinic. Furstenberg,[3] among 40,000 admissions to the department of otology, University of Michigan Hospital, found two cases of primary malignancy of the middle ear, one hemangiosarcoma and one adenocarcinoma. The latter was successfully operated on, followed by irradiation, and the patient was well four and a half years later. In 20,000 otologic cases, Bezold[4] found four otitic tumors, one of the middle ear and three of the external ear. Parrish[5] has reviewed the literature and finds more than 100 cases, practically all squamous cell carcinoma. He reports a case in which he did a radical mastoid operation, the mastoid being found sclerosed and the antrum small. The microscopic diagnosis was squamous cell adenocarcinoma. Roentgen rays and radium were used in massive doses, but they seemed only to stimulate the growth, not to reduce it.

The following case illustrates a combination of the foregoing methods that may be helpful:

G. B., a man, aged 58, was referred to me by Dr. Ralph D. Murphy of St. Petersburg, Fla., March 26, 1924, for treatment of a carcinoma of the inner portion of the floor of the external auditory canal. A section removed by Dr. Murphy, and examined by Drs. Bunce and Landham of Atlanta, Ga., showed squamous cell carcinoma. Symptoms had extended over a period of two years. Pains were described by the patient as being "terrific." Dr. James A. Babbitt found "a punched out necrotic area on the floor, occupying about the middle centimeter of the canal, extending out on the edge of the posterior wall, and a little increased thickening on the anterior wall."

We applied radium in the canal, 50 mg., filtered by 0.5 mm. of silver, 1 mm. of brass and 1 mm. of rubber, for one hour, March 26; and 25 mg. for two hours, March 27; April 10, April 24, May 15, June 16, June 25, September 8, each one hour; October 6, three hours, and Feb. 9, 1925, one hour. High voltage roentgen rays were applied, April 10 and 24, 1924, for a full erythema dose.

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Pfahler, G. E.: The Saturation Method of Radiotherapy in Deep Seated Malignant Disease, Proceedings of the International Congress of Radiology, London, July 1-4, 1925, Brit. J. Radiol.

2. Junod, A.: Primary Carcinoma of the Middle Ear, Schweiz. med. Wchnschr. **52**: 510 (May 25) 1922; abstr., J. A. M. A. **79**: 413 (July 29) 1922.

3. Furstenberg, A. C.: Primary Adenocarcinoma of the Middle Ear and Mastoid, Ann. Otol. Rhinol. & Laryngol. **33**: 677 (Sept.) 1924.

4. Bezold: Ueber das Carcinoma des Ohres, Ztschr. f. Ohrenh. **33**: 152, 1918.

5. Parrish, R. E.: Carcinoma of the Ear, Mil. Surgeon **55**: 43 (July 1) 1924.

Oct. 6, 1924, the evidence of disease had not completely disappeared from the floor of the canal. After consultation with Dr. Babbitt, I destroyed this area by electrocoagulation, and removed the dead bone by means of a dental burr.

The patient had shown improvement from the beginning, both in appearance and in relief from pain. During a period of about six months, he seemed to be free from disease, but, April 8, he returned complaining of shooting pains, during a week, sufficient to awake him at night. I found evidence of disease at a new area, in the region of the upper anterior wall near the drum. I applied 25 mg. of radium packed against this area for two hours and cross fired on this area with high voltage roentgen rays during four days, sufficient to keep a saturation value during a week.

The patient's physical condition would not have permitted an extensive radical operation.

The treatment outlined above has certainly given striking relief, and shows how radium, roentgen rays, and electrocoagulation can be combined even in this type of case.

MALIGNANT DISEASE OF THE NOSE

The epitheliomas that involve the skin over the nose can, I believe, all be cured, if treated by electrocoagulation, or thoroughly by irradiation, before they have invaded the cartilage, bone or ethmoid cells. The epitheliomas that originate in the mucous membrane of the nose, I believe, are best treated by radium, locally applied, sufficient to destroy the disease and to turn the surrounding mucous membrane white. This will require about 1,000 mg. hours of radiation and should be distributed over a period of about ten days. Only rarely can electrocoagulation be used to advantage.

The sarcomas and angiosarcomas, we do not treat by electrocoagulation, but by a combination of radium in the nostril and nasopharynx, and by cross firing with high voltage roentgen rays. One must carefully measure the depth radiation values, bring the radiation to the erythema dose value as soon as possible, and then keep it at this point for from one to two weeks, according to the saturation method referred to above.

Carcinoma and sarcoma of the antrum, like malignant disease anywhere, should be treated according to the special conditions present in the individual case. This has been emphasized by Stevens,[6] who reminds us that New selected for treatment only eighteen of thirty-three patients with malignant disease of the antrum who had applied to the Mayo Clinic during a period of two and one-half years. Especially must the form of treatment be modified, when the malignant disease of the maxillary sinus is an extension from the nostril, the palate or the alveolar process. The origin of the disease and its extent must be determined by means of all possible clinical examinations, but especially by means of a careful roentgen-ray study.

If a diagnosis can be made without an operation or removal of a section, I believe, it is better. Even if there were no danger of spreading the disease, such an operation surely interferes with the treatment, by increasing the tenderness and swelling in the neighborhood of the operation. When a diagnosis of malignant disease in the antrum has been made, gamma radiation from radium should be applied in the roof of the mouth, the nostril and the nasopharynx. There should be cross firing with high voltage roentgen rays anteriorly, laterally and from the opposite side, bringing the radiation in the entire area to the erythma dose as soon as possible, and keeping it at this saturation point for from ten to fourteen days. There will likely be marked improvement and perhaps disappearance of the disease at the end of two months. When the improvement has reached a standstill and there is still evidence of disease, electrocoagulation may be used, as illustrated in the following case:

I. S., a man, aged 60, who was referred to me for treatment by Dr. W. B. Fetterman, April 2, 1924, with a carcinoma filling the left antrum, which bulged anteriorly, laterally, and into the roof of the mouth, showed improvement under treatment, but still suffered from pain. November 11, Dr. Francis Grant, at my request, injected the fifth nerve with alcohol. This gave little relief. In December, Dr. Grant ligated the external carotid and resected the fifth nerve near the ganglion, under ether anesthesia. Then, without further anesthesia, I excised most of the disease from the antrum through the external wall by means of the radiotherm, and then destroyed all macroscopic disease by means of electrocoagulation. Two 25 mg. capsules of radium in 0.5 mm. of silver, 1 mm. of brass and 1 cm. of gauze were inserted in the antrum for sixteen hours. Microscopic examination by Dr. Eugene Case showed carcinoma.

Since this time the patient has had a recurrence near the anterior border of the inner wall, and one at the upper outer border. Both recurrences were destroyed with electrocoagulation, and radium was applied. For this destruction no local or general anesthesia were required, and the patient suffered no pain. The outcome of this case cannot be told; but his comfort and general conditions have certainly improved, and he is working daily as a salesman.

THE THROAT

Fibromas of the nasopharynx are best treated by radiation as recommended by New and Figi,[7] who has made a report on thirty-two patients treated in the Mayo Clinic from 1910 to 1923. Of these thirty-two patients, twenty-three had been operated on from one to twelve times before coming to the clinic. The fibromas are described as microscopically benign and clinically malignant. From 1915 to Jan. 1, 1924, twenty-three out of twenty-four patients were treated by radium. New and Figi say: "Radium is the treatment of choice for fibromas of the nasopharynx. With its use the usual operative mortality in these cases is eliminated. In most of our cases the tumor cleared up entirely, and in the others it was held in check during its period of activity." A recurrent case of this disease treated successfully four years ago has been reported in detail by Dr. Benjamin Parrish and myself.[8]

In my opinion, electrocoagulation has no place in the treatment of sarcoma of the nasopharynx. It is not practical to destroy all the disease, and there is great danger from secondary hemorrhage. These sarcomas yield very well to radiation, and with no great inconvenience, suffering or distress on the part of the patient. The gamma rays should be applied to the surfaces of the pharynx, postnasal space and tonsils, and high voltage roentgen rays should be applied externally. Even roentgen rays filtered through only 6 mm. of aluminum have produced brilliant results. New[9] finds that surgery and the cautery are of little use in high grades of malignancy of the nasopharynx, and recommends irradiation.

Carcinoma of the tonsil is best treated by irradiation in any stage, but the earlier the better. When a diagnosis can be made, I believe that an operation should be avoided. Brilliant results may be expected, if treated early. When the disease has extended sufficiently to produce palpable disease in the lymph nodes, we may expect palliative results, but probably not cure. Grier[10] advises, when the patient is first seen, that the cervical region on the affected side should be treated by high voltage roentgen rays, a dose being given that will produce a well defined erythema, and that radium needles or emanation tubes should be inserted into and around the tumor, after about three days. Our best results have been obtained by local surface application of gamma rays, combined with external treatment with high voltage roentgen rays, the radiation being carried to the erythema dose internally and externally, and then kept at this saturation point for from ten to fourteen days. We have derived much help, since 1921, from the use of the tonsil clamp, slightly modified so as to hold the radium on the inside (where a sponge is ordinarily applied). McKenzie[11] has made a rather enthusiastic report from the use of electrocoagulation in these cases, but I do not share this enthusiasm.

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[6] Stevens, R. H.: Malignant Growths of the Paranasal Sinuses Treated by Irradiation, Electrocoagulation and Other Methods, Am. J. Roentgenol. **11**: 532 (June) 1924.

[7] New, G. B., and Figi, F. A.: Treatment of Fibromas of the Nasopharynx, Am. J. Roentgenol. **12**: 340 (Oct.) 1924.

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[9] New, G. B.: The Treatment of Malignant Tumors of the Pharynx and Nasopharynx, Surg., Gynec. & Obst. **40**: 177 (Feb.) 1925.

CARCINOMA OF THE LARYNX

I have had no experience with electrocoagulation in malignant disease of the larynx, but it would seem theoretically to be a valuable method, so long as conditions will permit complete local destruction of all the diseased tissue plus an eighth of an inch of the surrounding healthy tissue. It should be useful wherever the ordinary cautery is useful, but must be used by direct vision, either by direct laryngoscopy or by laryngofissure, as has been practiced by Sargon,[12] who combines excision with irradiation. The only record that I find in literature of electrocoagulation in carcinoma of the larynx is that by Novak,[13] who says that he has had no untoward results in a series of 200 cases. He approaches the larynx by suspension laryngoscopy. Pancoast[11] says: "We freely acknowledge the superiority of improved surgical technic in operable cases. Radiation may be employed with care as a palliative measure with tracheotomy in inoperable cases, and possibly as a postoperative measure." In a discussion of Pancoast's paper, however, Regaud said:

> My colleagues and myself have treated twelve cases of carcinoma of the larynx with roentgen radiation alone, from 1921 to 1923; eight of them are clinically well at the present time (June, 1924); four resisted treatment, two with necrosis of the larynx; one was operated on, and one died. We have employed the following technic: 2 mm. zinc filter, 45 cm. spark gap, between points, repeating the application daily for three weeks, the total dose being an erythema dose after three weeks, sufficient to cause desquamation.

Regaud's technic corresponds in effect to what I have described as the "saturation method of roentgenotherapy." All Regaud's cases were checked by biopsy.

In a previous paper,[15] I recommended the introduction of radium needles through the thyrohyoid membrane, but in the most brilliant case there was a recurrence after three years, and I have not attempted this procedure since. Recently we have had such brilliant results in a very advanced case of totally inoperable carcinoma of the larynx, referred by Dr. Ralph Butler, as a result of daily radium and roentgen-ray treatment, according to the saturation method, given over a period of three weeks, that I am very much encouraged again. The larynx, especially the arytenoid cartilage, is especially sensitive to radiation, and, therefore, one cannot use massive or excessive dosage, or edema of the larynx, and strangulation may result.

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ABSTRACT OF DISCUSSION

Dr. J. Douglas Morgan, Philadelphia: In the treatment of malignant disease we have a choice of several methods—surgery, electrothermy radium and the roentgen ray. In a particular case any one of these methods may suffice, but in many cases a combination of one or more methods is essential for the best results. No case of malignant disease in which metastasis is likely should be treated by surgery or by electrothermy alone. Irradiation should be used, sometimes as a preoperative and certainly as a postoperative measure, since it does reduce the danger of metastasis. Many of these basal cell conditions have been treated successfully by surgery alone, but often at the expense of considerable deformity and surgical shock. The electrothermic methods, to a large extent, avoid these difficulties. One can be more conservative in the treatment by electrodesiccation or coagulation, because the heat produced in the tissues penetrates beyond the actual portion removed, and destroys any disease in the tissues beyond, therefore lessening, to a considerable extent, the possibility of recurrence. Then, too, such cases in this region, which are totally inoperable in the ordinary way, can be dealt with successfully by the coagulation method, because of its greater conservation of tissue and because one can reach parts otherwise inaccessible. Dr. Pfahler has mentioned some of the advantages of these methods, but has wisely cautioned that these demand skill, experience and an accurate knowledge of anatomy. Electrodesiccation is of particular value for small neoplasms when cosmetic results are desirable. Owing to the fact that desiccation does not produce tissue destruction, merely dehydration, there is practically no fibrous tissue formed, and, therefore, in these regions, in which good cosmetic results are imperative, it is of greater value than the coagulation method, in which the intensity of the heat is so much greater that destruction of tissue occurs with more scar tissue as a result. As Dr. Pfahler remarked, malignant disease of the middle ear is rare. This is fortunate, for it is certainly a most difficult condition to treat. Epithelium, cartilage and bone are directly or indirectly involved, and the only possible hope of relief in these conditions is the combined use of electrothermy with radium and the roentgen ray. The intensity of the treatment will depend on the condition present. Unfortunately, nearly all these cases are attended with such intense suffering that it can be relieved only by morphin, and thus both moral and physical strength are soon undermined. In the treatment of the skin over the nose, our experience indicates that the desiccation method is preferable to coagulation, on account of the better cosmetic results, and also better than irradiation, because there is less danger of recurrence. If necessary, the lesion can be treated several times by this method, whereas with irradiation one is limited in the number of applications possible. Cases involving the mucous membrane, when accessible, must be treated by desiccation, but many will require radium treatment in addition, both locally and over the adjacent lymphatics. We have had a large series of cases of antrum involvement. If the roof of the mouth is involved, the involved portion can be coagulated, and following this, the contents of the antrum; if the eye is involved, exenteration can be done and the antrum entered through the floor of the orbit, or, if necessary, we can go in from the front after a flap has been made of the tissues of the cheek.

Dr. Joseph C. Beck, Chicago: Dr. Pfahler is fortunate in that he is not only using irradiation or electrocoagulation, but also is able to do any necessary operative work in this connection. This means of treatment is comparatively new to the laryngologist. I have associated with me Dr. Orndoff. We work together in the treatment of malignancy and we have had some interesting experiences. I will not say we have had excellent results, but they are sufficiently good to warrant treating quite a number of malignant cases. I am sorry that Dr. Pfahler did not mention carcinoma of the larynx. Where there are small areas of carcinoma of the larynx, laryngectomies are done for fear of dissemination of the process by laryngotomy, and we are warned against implantation, which does happen; whereas the experience of men in this line of work who are able to apply electrocoagulation is that the carcinoma is destroyed beyond a doubt. This is, therefore, an excellent method, one that we should learn to use. A very valuable field for this method is in the nonmalignant cases; for instance, when there are stumps of tonsils because a thorough tonsillectomy was not done. If the tissue becomes infected, it can be handled by electrocoagulation. Again, in cases in which a perfect tonsillectomy was done but a compensatory hypertrophy of the plica or other lymphoid tissue, often mistaken for the remains of a tonsil, develops, electrocoagulation is indicated, especially if this tissue has repeated attacks of inflammation.

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[10] Grier, G. W.: Deep Roentgen and Radium Therapy in Carcinoma of the Tonsil, Am. J. Roentgenol. **11**: 537 (June) 1924.

[11] McKenzie, D.: Diathermy in the Removal and Treatment of Pharyngeal Cancer, Brit. J. Radiol. **30**: 9 (Jan.) 1925.

[12] Sargon: Malignant Neoplasms of the Pharynx and Larynx—Surgery, Radium and Radiotherapy, Arch. internat. de laryngol. **2**: 972 (Nov.) 1923.

[13] Novak, F. J., Jr.: Carcinoma of the Larynx, Illinois M. J. **44**: 338 (Nov.) 1923.

[14] Pancoast, H. K.: Observations on the Radiation Treatment of Carcinoma of the Larynx, Am. J. Roentgenol. **12**: 217 (Sept.) 1924.

[15] Pfahler, G. E.: The Treatment of Carcinoma of the Larynx by the Insertion of Radium Needles Through the Thyrohyoid Membrane.

DR. G. E. PFAHLER, Philadelphia: I do not do surgery. I do the electrocoagulation and clean away the tissue and do all that sort of thing, but I am not in any sense posing as a surgeon doing an operation.

RELATION OF CALCIUM CONTENT OF THE SPINAL FLUID TO POSTLUMBAR PUNCTURE HEADACHE [*]

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The problem of postlumbar puncture headache is an exceedingly perplexing one and no solution of it has been offered so far. Theories have been advanced, but they were merely of a speculative nature not substantiated by any pathologic or experimental evidence.

It is commonly known that the amount withdrawn has no bearing on the production or severity of the headache. Nor do the cytologic, serologic or chemical findings in the spinal fluid bear any relation to it. It is significant, however, that, comparatively speaking, only a small percentage of patients suffer from postpuncture headache.

Early in 1923, a paper by Depisch and Richter-Quittner[1] on the etiology of headache attracted our attention. They found that a total lack of calcium in the spinal fluid or the presence of only very small amounts is the cause of headache. They determined the calcium content of spinal fluids of twenty-one patients of various pathologic conditions suffering from headache, and found in seven of the fluids no calcium at all; in one, however, there was 9.56 mg. per hundred cubic centimeters, and in the remainder of the fluids there were only slight amounts. The administration of a calcium salt, they assert, promptly relieved the headache. They also note that a lumbar puncture relieved the patients.

We decided to investigate these findings in relation to postlumbar puncture headache. In looking over the literature on calcium determinations of the spinal fluids in normal and pathologic states we found that the following investigators estimated amounts of calcium in normal fluids as the normal average: Yvon,[2] 11.2 mg. per hundred cubic centimeters; Mestrezat,[3] 9.5 mg.; Kummer and Minkoff,[4] from 5 to 5.2 mg.; Leichner,[5] 5.2 mg., and Depisch and Richter-Quittner, 2.5 mg.

The earliest report on calcium estimation in pathologic fluids is that of Schmidt[6] in 1850, who examined two fluids of hydrocephalus cases and found 15.3 mg. in the adult and 7 mg. in a fetus. Mestrezat[7] found 6.2 mg. in the fluid from a hydrocephalus case drawn post mortem. Halverson and Bergeim[8] estimated an average of 5.1 mg. in twenty-five pathologic fluids, and 6 mg. in one of paralytic dementia. Mann[9] found the calcium content in fluids of twelve epileptic patients and six nonepileptic patients to be between 8 and 9 mg. Weston and Howard's[10] averages were 5.2 mg. in fluids of excited and 5.4 mg. in the depressed types of manic-depressive insanity. Depisch and Richter-Quittner report quantities varying in amount, the highest being 24.62 mg. in one fluid, 1 mg., one with only a trace, and in seven fluids, as mentioned above no trace of calcium. Finally, Critchley and O'Flynn[11] found in 115 pathologic fluids the lowest average to be 5.2 mg. and the highest average, 8 mg., giving a general average for males as 6.24 mg. and for females 6.14 mg. per hundred cubic centimeters. In one case they found a trace of calcium. The last named authors, we find, also went over these findings with relation to the etiology of headache. Of their material examined, seventy were of males, forty-one of females, and in four no sex is mentioned. They do not publish lowest or highest amounts of calcium but state only the averages of the various groups of pathologic conditions examined.

From their observations they conclude that there was no relation between the calcium content of the spinal fluid and the intracranial pressure, cytologic and serologic findings, protein content, the quantity of inorganic constituents or sugar. Nor do they find any relation of the calcium content to headaches.

We have examined 133 fluids and, in order not to influence the results, no particular diets were ordered. All punctures were made in the afternoon. The fluids were absolutely free from blood and tested twenty-four hours after puncture; from 3 to 5 c.c. was used for analysis.

In the determination of the calcium we followed Clark's[12] method by precipitating the salt as oxalate and redissolving it in normal sulphuric acid and titrating with hundredth normal potassium permanganate, calculating as follows:

$$\frac{\text{Number c.c. of hundredth normal KMnO}_4 - (0.05 \times 0.2)}{\text{Number c.c. of spinal fluid used}}$$

= mg. Ca per hundred cubic centimeters of spinal fluid so that each cubic centimeter of potassium permanganate solution would represent 0.2 mg. of calcium.

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[*] From the Neurological Service and Pathological Laboratory of the Kings County Hospital.

[*] Read before the Section on Nervous and Mental Diseases at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

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Summarizing our results, we find (Table 3) that in fifty-nine normal fluids the average calcium content was 5.8 mg. per hundred cubic centimeters, coming near to Kummer and Minkoff's and Leichner's findings. In estimating the average calcium in the male and female patients of the total 133 fluids examined, we also find, as did Critchley and O'Flynn, a lower amount in the female than in the male, and very much near their figures; namely, 5.94 mg. for the male and 5.56 mg. for the female. Our lowest calcium content (Table 1) was 1.2 mg. and the highest, 9.2 mg., with a total average for all the 133 fluids of 5.52 mg.

In comparing the low, high and average calcium content of the spinal fluids of the various pathologic states (Table 1), it is noteworthy that in cases of chorea we have an average of 4 mg., far below the average normal and in brain neoplasms and abscess far above the average normal; namely, 6.71 mg. Of course, one cannot draw definite conclusions from so few cases recorded, but these findings seem sufficiently significant to merit further investigation. In all other pathologic conditions, the variations of the calcium content are so small as to be of no particular significance.

Table 1.—*Calcium Content of Spinal Fluids in Various Pathologic States*

Pathologic State	Number of Cases	Calcium Content in Milligrams per 100 C.c.		
		Lowest	Highest	Average
Epidemic encephalitis, acute and chronic	21	2.4	9.2	5.76
Tabes dorsalis	4	2.5	5.9	4.92
Paralytic dementia	5	4.6	6.7	5.66
Cerebrospinal syphilis	17	5.0	8.0	5.80
Brain neoplasm	6	5.4	8.0	6.71
Brain abscess	1	8.3	...	....
Cerebral hemorrhage	18	5.2	7.0	6.00
Cerebral thrombosis	7	2.0	6.5	5.50
Paralysis agitans	3	5.2	6.3	5.60
Cerebral arteriosclerosis	6	5.4	6.5	5.91
Tuberculous meningitis	1	6.3	...	....
Acute alcoholism	5	6.3	6.4	6.35
Chorea	6	1.2	5.4	4.00
Cord neoplasm	3	5.4	6.5	5.95
Transverse myelitis	3	5.0	6.9	5.87
Epilepsy	3	5.1	6.0	5.47
Psychoses	2	5.6	5.7	5.65
Neuroses	6	4.8	7.8	5.78
Neuritides	3	5.4	6.5	5.95
Cardionephritis	10	5.4	7.0	6.10
Pulmonary tuberculosis	2	5.6	6.8	6.20
Chronic arthritis	1	5.1	...	....
Total	133	1.2	9.2	5.52

Table 2.—*Calcium Content of Spinal Fluids According to Wassermann Reaction*

Wassermann Reaction	Number of Cases	Calcium Content in Milligrams per 100 C.c.		
		Lowest	Highest	Average
Positive in blood, negative in fluid	5	4.6	6.5	5.36
Negative in blood, positive in fluid	2	5.7	6.9	6.30
Positive in both	19	5.1	8.0	5.98

Comparing the low, high and average calcium content of fluids in relation to their pathologic chemical, cytologic and serologic aspects, we find (Tables 2 and 3), as did Critchley and O'Flynn, that there is no relation between these abnormal conditions and the calcium content. While we do find at times some deviation from the averages of the normal fluids, they are very insignificant.

This leads us to the consideration of the relation of the calcium content of the spinal fluids of patients who suffered from postlumbar puncture headache. Fourteen of the 133 patients in whom puncture was done suffered postpuncture headache. Comparing the low, high and average amounts of calcium in the fluids of these patients with these of the normal fluids (Table 4), we find that they have a slightly lower amount, 4.1 mg. being the lowest and 5.9 mg. the highest, with an average of 5.31 mg.

Table 3.—*Calcium Content of Spinal Fluids with Wassermann Reaction Negative, Globulin Positive*

Other Findings	Number of Cases	Calcium Content in Milligrams per 100 C.c.		
		Lowest	Highest	Average
Marked increase in cells	13	5.0	7.0	5.90
Slight increase in cells	35	2.4	9.2	5.93
Normal fluids	59	4.6	7.8	5.80
Lange positive fluids	42	2.0	9.2	6.00
Total fluids of male patients	91	4.8	9.2	5.94
Total fluids of female patients	42	1.2	8.6	5.56

In only one instance, that of a patient with postencephalitic *Parkinson's* disease, was the headache most severe, lasting ten days. The calcium content of the fluid was 5.8 mg., which, according to our findings, is normal. Neither the administration of calcium lactate, or acetphenetidin, nor the recumbent posture with the legs elevated offered him any relief. All other patients suffered headache from two to four days.

This series of thirteen patients we have divided into two groups. To eight of them calcium lactate in doses of 0.65 gm. was administered. The headache would disappear within half an hour after the administration, to reappear again within three or four hours. The other group of five patients, as our control, were kept in the recumbent position just as all others and were given acetphenetidin with the same results as those treated with the calcium salt. They also were relieved for a few hours at a time and their headache invariably reappeared until after the second or fourth day, respectively, when they would fully recover.

Table 4.—*Calcium Content of Fluids of Patients with Postlumbar Puncture Headache*

Diagnosis	Number of Cases	Calcium Content in Milligrams per 100 C.c.		
		Lowest	Highest	Average
Postencephalitic *Parkinson* disease	8	4.1	5.9	5.42
Chorea	4	4.6	5.4	4.86
Cord tumor	1	5.5	...	....
Polyneuritis	1	5.4	...	....
Total	14	4.1	5.9	5.31

CONCLUSIONS

1. In no case did we find a total absence of calcium in the spinal fluid.

2. There seems to be no relation between the calcium content and the pathologic condition of the fluid or of the patient, with the possible exception of cases of chorea, brain tumors and abscess, as compared with the findings in the normal fluids.

3. The amount of calcium in spinal fluids of patients suffering from postpuncture headache, while slightly less than the average normal, is not significant in any sense of the cause of headache, since patients with as low amounts as 1.2, 2 and 2.4 mg. per hundred cubic centimeters have not suffered any discomfort after puncture, and in none of these cases was the fluid under pressure and they had no headache before.

4. In the series of cases in which the calcium did temporarily relieve headache, we would in all probability have had the same results with other means, as shown in our control cases.

ABSTRACT OF DISCUSSION

Dr. Julius Grinker, Chicago: I cannot understand this sentence which appears in the summary: "However, calcium given by mouth does relieve headache in most instances and acts as a prophylactic." That is inconsistent with what the author has told us. If this drug acted as a prophylactic, he should have had a series of patients with headaches who were not given calcium, as opposed to the series treated with calcium lactate, and the last series should have been free from headaches, while the first should continue to have headache. Another point: The only remedy I have found against the headaches following lumbar puncture is absolute rest in a horizontal posture. The headache of longest duration after puncture in my practice lasted three weeks. No sooner did the patient rise than the headache returned. When the patient resumed a recumbent posture the headache regularly subsided.

Dr. Irving J. Sands, Brooklyn: Since the publication of Dr. Solomon's paper on the relief of postlumbar puncture headache by the administration of pituitary extract, I have used his method in those cases that presented gross neurologic disorders, in the psychoses, in the psychoneuroses, and in those patients who came for a diagnostic survey. In my opinion, it is an excellent remedy. I cannot recall a single instance in which there was as severe headache as I had noted before I used the drug.

Dr. Paul G. Weston, Jamestown, N. Y.: The great variation in the amounts of calcium reported interested me more than the relation of calcium to puncture headache. The figures differ so markedly from most published results that one wonders what the explanation is. My own results, while limited to about 500 analyses of spinal fluid and blood, showed a very marked constancy in the amounts not only of calcium but also of magnesium, sodium and potassium. These cases included chorea, brain tumors, encephalitis, various organic nervous diseases and a number from cases in which the nervous system was not involved. The technic used is most important, for even a very slight error in technic may result in variations of 2 or 3 mg. per hundred cubic centimeters of fluid. Every step in the analyses must be controlled carefully. It hardly seems possible that one can go about with so little calcium as 1 mg. per hundred cubic centimeters without serious symptoms. The physiologists showed us long ago that even a slight variation of the salts in blood or spinal fluid is always associated with marked symptoms.

Dr. Irving Pardee, New York: The question of spinal puncture headache is a serious problem. A patient is told that a spinal puncture amounts to nothing; then he may have to spend a week in bed after it is done. It is trying both for the physician and for the patient. I have found nothing that will relieve a spinal puncture headache, except the recumbent position—and that does always relieve the patient. If the patient will keep his head low, flat on the bed, without pillows, he will not have a headache. Since Dr. Solomon reported the use of pituitary extract and hypertonic solutions in an attempt to combat spinal puncture headache, I have used it in a number of cases, although I do not feel that the pituitary extract really has any therapeutic effect in these cases. There are a number of points in my experience with spinal puncture headache which seem interesting. One of them is that we are more apt to see it in normal persons than in patients who present an abnormal spinal fluid. We very rarely see a patient with any form of neurosyphilis present a spinal puncture headache following removal of fluid. I am quite willing to be enlightened as to why this is so, if any one can tell us. Another thing: Multiple sclerosis almost universally causes spinal puncture headache. Why that is so, I also do not know. The question of calcium, as far as I can see from Dr. Neustaedter's paper, really does not seem to enter into this problem. There was a great deal of variation in these calcium statistics, all kinds of conditions. In the normal subject, there was considerable variation. I do not see that that really is the crux of our problem. Dr. Robert mentioned in one of his papers on spinal puncture headache that it was due to puncturing the dura, and the remaining spinal fluid draining off through that opening. I do not feel that that is really the crux of the problem, because one can take out as much as 80 c.c. from the spinal canal and still have no spinal puncture headache even though the patient may get up immediately afterward.

Dr. J. A. McIntosh, San Antonio, Texas: I, too, think the recumbent posture is helpful after spinal puncture. The most important thing is to do the puncture with the patient recumbent. I have followed that procedure, and the headaches have been less frequent and less severe than in cases in which the puncture was done while the patient was in a sitting posture.

Dr. Marcus Neustaedter, New York: In answer to Dr. Grinker, I am sorry to say that the abstract was not shown to me before printing. I did not mean to convey that impression at all, although it was reported in the Vienna paper that as a prophylactic measure the administration of calcium prevents postlumbar puncture headache. With regard to pituitary extract, Dr. Sands reports very wonderful results, and Dr. Pardee reports no results at all. I have not tried it, because I am not in the habit of jumping at things because of the report of one case. I want to see confirmation before I experiment on patients. I read the paper rapidly and as a result omitted to state a few facts. No particular diet was ordered in any case. All fluids were examined within twenty-four hours after puncture, and the amounts used were between 3 and 5 c.c. The fluids were examined according to Clarke's method, by which the salt is precipitated as an oxalate and titrated in 1 per cent. permanganate solution, each cubic centimeter representing 0.2 mg. of calcium per hundred cubic centimeters of spinal fluid. Each determination was made twice, and sometimes three times, and varied very little. We had only three cases of 1.22 and 2.4 mg. per cent. out of the 133. While we do find choked disks in brain tumors, we have brain tumors without choked disks, and because a patient has no choked disk one would not say, "No choked disk, no tumor." I quite agree with the last speaker that there is not much significance to be attached to the relationship between the calcium and the headache. With regard to Dr. Pardee's statement that he believes all postlumbar puncture headaches are relieved by the recumbent posture, I can recollect one patient with multiple sclerosis whom we kept in bed four months without relieving her headache. Nothing gave relief.

THE USE OF ANTIMONY AND POTASSIUM TARTRATE IN TRICHINOSIS

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As yet the active treatment of trichinosis is unsatisfactory. It is realized that the prophylactic measure of complete cooking of pork and sausage is by far the most important method we have of preventing the disease; and yet, even in spite of such a well known measure, trichinosis continues to exist.

A review of the literature reveals that various methods of treatment are offered. In the early recognized cases a thorough evacuation of the gastro-intestinal canal is advised. Glycerin, because of its hygroscopic properties, has been recommended. Serum prepared from animals convalescing from the disease has been recommended (Salzer[1] and Hall and Wigdor[2]). But various observers, including Schwartz,[3] were unable to show the efficacy of this line of attack. Aspidium, santonin and thymol have all been tried with indifferent results. Tyzzer and Honeij[4] attempted to destroy the trichinae by the use of the roentgen ray and radium, but this proved unsatisfactory. Arsphenamin and neo-arsphenamin have been tried, but with no definite results. The foregoing methods would be of value only if they destroyed or removed the parasite before it encysted itself in the various muscular tissues of the body.

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[1] Salzer, B. F.: A Study of an Epidemic of Fourteen Cases of Trichinosis with Cures by Serum Therapy, J. A. M. A. **67**: 579 (Aug. 19) 1916.

[2] Hall, M. C., and Wigdor, Meyer: Experimental Study of Serum Therapy in Trichinosis, Arch. Int. Med. **24**: 601 (Nov.) 1918.

[3] Schwartz, Benjamin: Serum Therapy for Trichinosis, J. A. M. A. **69**: 884 (Sept. 15) 1917.

[4] Tyzzer, E. E., and Honeij, J. A.: Effects of Radiation on the Development of Trichinella Spiralis, Parasitol. **3**: 43 (Dec.) 1916.

It was through a suggestion by Dr. Theodore Tieken, formerly on the attending staff of the Cook County Hospital, that antimony and potassium tartrate (tartar emetic) was tried in the case reported here. This case was a very suitable one for the use of the drug, because it was diagnosed during the stage of invasion of the parasites, as shown by the demonstration of the larvae in the blood stream.

While it is realized that absolute conclusions cannot be drawn from one case, yet this report is made to stimulate other men to use this drug, and so prove or disprove its value in cases of trichinosis.

REPORT OF CASE

N. D., a woman, aged 35, Italian, entered the Cook County Hospital, Dec. 19, 1923, in the gynecologic service, with an examining room diagnosis of pelvic peritonitis. The patient could neither understand nor speak English, but later it was learned from relatives that six months previous to her present illness the patient was delivered of an eight months pregnancy by a midwife at the patient's home. There was no instrumentation, and the patient had a normal puerperium. Four days prior to her entrance into the hospital, she began to have slight vaginal bleeding associated with slight backache and lower abdominal pains. These pains were intermittent in character, and at times were sharp and severe and located in the lower abdomen, and were present on her entrance into the hospital. In addition, diarrhea with a slight headache had also been present. On further careful questioning, it was thought that the patient had had some recent vaginal instrumentation because of the bleeding. This, however, was entirely ruled out. No history of eating uncooked pork or sausage could be obtained, and no other members of the family were ill.

The patient was well nourished, breathed rapidly and with difficulty, and was acutely ill. The pulse rate was 122, the temperature, 100.4 F., and respirations, 30. The blood pressure was 95 systolic and 70 diastolic. The cheeks were flushed, the lips dry and parched, and the tongue showed sordes. The chest and heart were normal. The pulse was barely perceptible, running and of poor quality. The breasts were engorged and filled with milk. There was marked tenderness throughout the lower abdomen, but no rigidity or special point of tenderness. Slight costovertebral tenderness was present bilaterally. The labia were covered with blood and gaped widely, and a slight bloody vaginal discharge was present, but no putrid odor. Internal vaginal examination was not made, in view of the fact that the patient was bleeding, and because her general condition indicated a possible pelvic postpuerperal infection. On rectal examination, marked tenderness was present on pressure upward in both directions, but no masses were felt, and no marked tenderness was elicited on movement of the cervix. No knee jerks could be elicited, but the Achilles tendon reflex was present. The urine showed a trace of albumin, but otherwise was normal. The white blood count was 5,400.

At this time a diagnosis was made of either typhoid or postpuerperal sepsis. Blood was drawn for a Wassermann and a Widal test, for blood culture and blood chemical examination.

The next day the temperature fluctuated between 102 and 103.8 F., with respirations from 28 to 36, and the pulse from 96 to 110. The white blood count was 8,150. The patient still complained of abdominal pain, appeared acutely ill, and had involuntary evacuations. On the 21st, the temperature ranged between 99 and 102 F.; the white blood count was 8,700; the red blood count, 5,200,000, and the hemoglobin 90 per cent. The differential count showed: small mononuclears, 3; large mononuclears, 4; polymorphonuclear neutrophils, 79, and eosinophils 14, in 100 cells counted. In view of the marked eosinophilia with diarrhea, abdominal pain and tenderness, with a fluctuating temperature, a diagnosis was then made of trichinosis.

A biopsy was performed on the gastrocnemius, but no trichinae were found. December 22, blood was drawn to see whether the larvae were present in the blood stream. Miss Kaplan, the bacteriologist at the hospital, reported the presence of the larvae of *Trichina spiralis* in the blood stream.

The Wassermann reaction on the blood was negative; the Widal test was negative; the blood culture was sterile, and chemical examination of the blood showed nonprotein nitrogen, 41.80; urea nitrogen, 22.42; creatin, 1.63, and sugar 91.00 mg. per hundred cubic centimeters of blood.

December 24, treatment with antimony and potassium tartate was instituted, and 1 c.c. of a freshly prepared 2 per cent. sterile solution was given intravenously. December 25, 2 c.c. of the 2 per cent. solution was given intravenously. Following this the patient began to feel much better, and her temperature dropped to normal levels. December 26, 3 c.c. of the 2 per cent. solution was given; on this day, the patient developed slight muscular tenderness over the biceps brachii. December 28, 4 c.c. were given. December 29, the patient felt fine; there was no muscular tenderness, and the temperature was normal. December 30, the patient was up and about without any complaints. December 31, the patient was released, and went home feeling well.

COMMENT

In this case, very small doses of antimony and potassium-tartrate proved effective. Rules for its administration as given by Rogers,[5] in cases of kala-azar, consist in the giving of from 3 to 4 c.c. intravenously for every 10 pounds (4.5 kg.) of body weight. The solution should be a freshly prepared one of 2 per cent. strength, in distilled water. The injections should be given, as a rule, every second day or even third day, and the dose gradually increased, but never beyond 10 c.c. for every 10 pounds (4.5 kg.) of body weight.

It is thought that the foregoing method of Rogers should prove of value also in cases of trichinosis. As yet, I have not had the opportunity of trying it out. One point should be kept in mind, and that is, that it is best to start with small doses of the drug and then gradually increase the dosage daily or every other day.

In the use of antimony and potassium tartrate intravenously, the method is not free from danger. One has to be careful not to get any of the drug into the surrounding tissues, because it produces intense pain and a tendency to inflammation and necrosis of the tissues.

The maximum effect of the drug is attained before localization of the parasites within the muscles; therefore, in suspicious cases of trichinosis, or in doubtful cases of typhoid, one should early and diligently search for the larvae of *Trichina spiralis* in the blood stream and spinal fluid. If the parasites are not found, and if the case presents an eosinophilia with a fluctuating temperature and gastro-intestinal symptoms, then treatment with antimony and potassium tartrate should be instituted.

104 South Michigan Avenue.

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[5] Rogers, in Oxford Medicine 5: 883, 1921.

Immunity of Scalp to Leprosy.—We have never yet come across any leprous lesion of the scalp, either as a primary or as a subsequent lesion, though we have met with anesthesia of the scalp due to leprous disease of the supra-orbital nerve. Why the connective tissue of the scalp should not give shelter to the lepra bacillus it is difficult to say, as the adjacent parts, such as the forehead, ears and neck, are frequently the sites of gross leprous lesions. It may be due to the peculiar blood supply, the length of the hair follicles, or the denseness of the fibrous tissue of the superficial parts of the scalp. In the scalp man most nearly resembles the hair-covered lower mammals on which so many attempts to inoculate the lepra bacillus have apparently not resulted in any success. The immunity of the scalp may be due to this reason.—Rogers, Leonard; and Muir, Ernest: Leprosy, New York, William Wood & Co., 1925.

ALLERGIC AND TOXIC PROPERTIES OF LENS PROTEIN [*]

SANFORD R. GIFFORD, M.D.
OMAHA

I. IMMUNE REACTIONS TO LENS PROTEIN

BY SANFORD R. GIFFORD, M.D., WITH THE ASSISTANCE OF A. A. STEINBERG, M.D.

Since the report of Verhoeff and Lemoine[1] on endophthalmitis phaco-anaphylactica, in 1922, we have been interested in the question of reactions to lens protein, and have performed skin tests in a series of unselected cataract cases in which operation was performed by ourselves, Dr. Harold Gifford and Dr. James M. Patton.

Verhoeff and Lemoine found that twelve patients showing inflammatory reactions after ruptures of the lens capsule all gave positive skin tests with lens protein. Five of the eyes were enucleated and showed a type of inflammation in some ways unique, which they called endophthalmitis phaco-anaphylactica, believing that it was due to previous sensitization to lens protein, the ocular reaction occurring when lens material was absorbed by the aqueous. Of fifty other cases of various kinds, four gave positive skin tests, and two of these, in which cortex was left at operation, developed ocular reactions. The serums of two patients with positive reactions were tested for precipitins to lens protein, but with negative result. After sensitizing guinea-pigs with one subcutaneous injection of lens protein, so that after four weeks they gave a positive skin test, discissions were performed, and four out of seven animals showed marked ocular reactions, with a histologic picture like the endophthalmitis seen in the human cases. With rabbits, results were not so uniform.

A further series of 168 cataract cases was reported by Lemoine and Macdonald.[2] Fourteen positive tests were obtained, or about 8 per cent. Of these, eight patients developed ocular reactions following operation, whereas no ocular reactions occurred in the negative cases. One patient with a 3 + skin test developed severe endophthalmitis, but attempts to immunize him with ascending doses of lens protein were unsuccessful. A focal reaction in the eye followed each injection. Two patients, however, showing positive tests, were immunized in this way, until the skin test was negative, and the operation was performed without undue reaction.

In our series, intradermal tests were made, an emulsion of pig lens being used, made up according to Verhoeff and Lemoine. Powdered lens in 0.03 gm. quantities, tested for sterility, was added to 1 c.c. of sterile salt solution at the time of each test, making a 1 : 10 solution of whole lens (1 : 30 dried lens). As a control, 1 : 100 and 1 :1,000 solutions were made from the first solution and used similarly in most tests. When the injection of 1 : 10 produced only a slight reaction after twenty-four hours, this usually disappeared after forty-eight hours, and was called ±. When it gave a reaction of 2 cm. or more in diameter, the 1 : 100 injection was always positive and the 1 : 1,000 usually slightly so. Eighty-seven patients were tested, nearly all of whom had a cataract. Of these, eleven gave positive skin tests, or 12.6 per cent. Six more gave ± tests. Fourteen cases were tested with both pig and human lens. Of these tests, eleven were negative; one was positive with both; one ± with human and + with pig lens, and one — with human and + with pig lens. This is in accordance with Verhoeff and Lemoine's observation that cataractous lens is a less powerful antigen than normal lens. (Hektoen,[3] however, found cataractous lens as potent an antigen as normal lens.) Thinking that the patients who gave positive skin tests would probably show other antibodies to lens protein, we made precipitin tests on the serums of four such patients. Two of these, from patients with positive skin tests and marked postoperative reactions, were negative. Two from patients with positive skin tests but negative ocular reactions gave positive precipitin tests, one in a dilution of 1 : 5,120 and one at 1 : 6,400. The serum of one patient with a positive ocular reaction but a negative skin test proved negative for precipitins.

The eyes of all patients were observed for reaction and for the amount of retained cortex. Of the sixteen patients with + or ± tests, six showed more or less marked ocular reactions. In two of these, no retained cortex could be seen, but since the combined expression with capsulotomy was done, a small amount was probably present. In the four others, more or less cortex was present. In one patient, Mrs. J., who gave a markedly positive skin test, the ocular reaction was fairly severe for two weeks after the extraction, but cleared up, giving a vision of 20/30 after discission. Mr. G., who had retinitis pigmentosa, with an immature and probably complicated cataract, gave a positive skin test. A good deal of cortex was left and a rather severe iritis followed, lasting ten days. A discission at that time resulted in a clear pupil, but vision was limited to hand movements, probably due to previous fundus changes. Mr. L. had some retained cortex with a moderately severe reaction lasting three weeks, but clearing up so that the fundus was well seen. Vision was limited to hand movements due to an old chorioretinitis. Mrs. M. was operated on to remove part of the nucleus left at a previous operation, her cataract being very hypermature and shrunken. A rather severe reaction followed, the eye being still congested, with a good deal of membrane when she was last seen five weeks later. The skin was 1 +. Mrs. B. and Mr. M. both gave positive skin tests, with moderate congestion following the operation, though no retained cortex could be seen. Both obtained vision of 20/30 or better.

The reaction in these six cases may well be interpreted as due to their hypersensitiveness to lens protein. Hypopyon or any of the signs usually associated with a severe infection were not present in any of these cases, and probably in no case did the reaction seriously affect the final result. One case, however, seemed to satisfy all the conditions for a proof of endophthalmitis as a result of hypersensitivity to lens protein. It is not included in the series, as the tests were done after the reaction developed.

Mr. M., aged 76, was operated on for hypermature senile cataract of the right eye. The operation was done with a sliding flap and iridectomy, but after the cystotomy, *before* any attempt at expression was made, vitreous appeared. Owing to several conditions, it was thought best not to extract the lens, but to use repeated discissions later, so the wound was closed with the flap, very little vitreous being lost. A severe reaction followed; the cornea became vascular, and congestion persisted for three weeks when the patient was dismissed. Two months later a skin test with pig lens was 4 + in all dilutions, the area of redness and swelling exceeding 6 cm. in diameter and persisting five days. The ocular reaction had persisted, the iris and cornea being vascular, and not much absorption of cortex had occurred. An attempt was made to desensitize, starting with 0.2 c.c. of 1 : 20 lens emulsion and increasing to 0.6 c.c. of 1 : 10. Reactions followed the early injections but not the last two. Milk injections and large doses of sodium salicylate were also given, and the ocular reaction subsided somewhat. While it was realized that the lens should be removed as the irritating factor, it was felt that this would be disastrous, so an attempt was made to cut through the iris and remainder of the lens with a thin cataract knife. The result was doubtful, and an increase in the reaction followed. The patient was dismissed, but kept under observation till his death two months later of pneumonia. Permission to remove the eye was not obtained. If the skin test had been done at first on this patient, he would have received a preliminary course of lens injections, every effort would have been made to remove the lens in its capsule at the first operation, and the outcome might have been different.

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[*] Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of *the American Medical Association*, Atlantic City, N. J., May, 1925.

[1] Verhoeff, F. H., and Lemoine, A. N.: Tr. Int. Ophth. Cong., 1922, p. 234.

[2] Lemoine, A. N., and Macdonald, A. E.: Arch. Ophth. **53**: 101-118 (March) 1924.

[3] Hektoen, Ludvig: J. Infect. Dis. **31**: 72 (July) 1922.

Less easy to interpret is the case of Mrs. M., who gave a markedly positive skin test, persisting over seventy-two hours, showed a good deal of retained cortex, but no ocular reaction. This was one of the cases with a positive precipitin test. Mrs. A. also had some cortex left, a ± skin test, but no ocular reaction.

ANIMAL EXPERIMENTS

Attempts were made to confirm the results obtained by Verhoeff and Lemoine with animals sensitized to lens protein and later subjected to discissions. Rabbits were used as, in spite of the greater ease with which the guinea-pig can be sensitized, it was felt that the eye of the latter animal is so small that a discission would be apt to traumatize it sufficiently to cause some reaction, whether it was sensitized or not. Also the serologic tests, which seemed desirable, would be most inconvenient with the guinea-pig.

In five rabbits, 1/24 gm. of pig lens protein per hundred grams of body weight was injected subcutaneously. Four weeks later, skin tests were made and discissions performed. In four the skin tests were negative at this time, and in three of these the discissions caused practically no congestion. One rabbit with a negative skin test showed a rather marked reaction persisting for ten days after discission. A discission made on the other lens, however, caused no reaction. The one rabbit that gave a positive skin test showed a rather marked reaction after discission. Precipitin tests made with the serums of these five rabbits, pig lens being used as the antigen, were negative in all dilutions.

As the skin tests showed no definite evidence of sentitization in most animals, different methods of sensitizing were tried. It was realized that these methods would cause some immunity, but that a stage of sensitization might also occur. Five rabbits were injected intraperitoneally every three days with three to four increasing doses, the first being, in most of them, 1/400 gm. of dried lens protein per hundred grams of body weight. Tests were made from four to six weeks after the first injection, and three animals were found to have positive skin tests. Discissions were done, but in only one animal did any ocular reaction follow, a rather slight one, lasting two days. Precipitin tests on four of these animals were negative. Thus, while some evidence of sensitivity was afforded by skin tests in these animals, they showed no definite ocular sensitization.

In an attempt to produce still greater immunity, nine rabbits were injected according to the technic recommended by Hektoen in producing precipitins. Four intravenous injections were given at three day intervals, the dose being increased from 2 to 6 or 8 c.c. of 10 per cent. lens emulsion. The tests and discission were made about three days after the last injection. Five of these animals had been used from two to four months before for intraperitoneal injections, but most had given negative reactions. Some precipitins were found in the serums of all these rabbits, one being positive in a dilution of 1 : 10,240, one at 1 : 1,280, one at 1 : 640, and the others in lower dilutions. As might have been expected, only one showed a positive skin test. The surprising fact was, however, that five of these animals had fairly marked ocular reactions following discission, persisting from three to ten days. This was unexpected, and is a little hard to reconcile with Verhoeff and Lemoine's view that a positive skin test is the sign of sensitization, and that animals immunized with increasing doses should show no reaction after discission. No definite conclusion can be drawn from it, except that immunity as shown by serologic tests is not incompatible with a severe ocular reaction to retained lens matter. It indicates the complexity of this problem, as of any immunologic problem. The possibility is raised that in an effort to abolish a patient's sensitivity, we may even increase it, as seemed actually to have been done in these animals; but the small number of experiments does not warrant more than a mention of this as a possibility.

In any case, it seems fairly well proved that animals can be sensitized to lens protein, so as to give an increased ocular reaction to absorption of lens matter from the eye.

How from 8 to 12.5 per cent. of human beings become sensitized to lens protein so as to give positive skin tests, when it required such large doses, given intravenously, to sensitize rabbits at all regularly, is another problem. In several patients, to be mentioned later, who had been absorbing hypermature cataracts for years, this did not occur. Nor did it occur in several cases of retained cortex in which the skin test was repeated some time after the operation. It seems probable that enough lens protein is absorbed through eating meat or meat products to sensitize some highly susceptible individuals.

It must be remembered that the organ specificity of lens protein assumed by Verhoeff and Lemoine is not admitted by all immunologists as proved. Recent work by Kodama [4] leaves it open to doubt, and indicates certain group reactions common to lens protein and other proteins of the eye.

Another complication in the problem is the occurrence of ocular reactions to absorbing lens material in persons giving negative skin tests.

II. TOXIC PROPERTIES OF LENS PROTEIN

By S. R. Gifford, M.D.

Verhoeff and his co-workers, in their series, found that no cases with negative skin tests showed any postoperative reaction from retained cortex. The only exception to this was one case of morgagnian cataract, and here the authors believe the reaction was like that from any necrotic tissue. In the present series, eight severe ocular reactions occurred, apparently due to absorption of lens material, in patients whose skin tests were negative. All were absolutely negative, except that of Mrs. H., which showed a faint red area less than 1 cm. in diameter around the 1 : 10 injection, which disappeared in forty-eight hours, and was considered negative. Three of these were cases of severe inflammation with rise of tension, in patients with spontaneously absorbing hypermature cataracts. The others occurred following operation.

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[4] Kodama, R.: J. Infect. Dis. 30: 418 (April) 1922.

Mrs. K., aged 80, had been treated for simple glaucoma by Dr. Harold Gifford since 1917, a trephining having been done in the right eye in 1918, which was successful in controlling tension. Cataracts developed, and in 1922 an attempt was made to extract the right lens, now considerably shrunken and adherent to the iris. Only a small amount of cortex was expressed, and, as vitreous presented, the operation was discontinued. Some attacks of pain and congestion followed, and the tension was raised at times. An iridectomy was done three months later, but the attacks of congestion continued. In 1924, as much as possible of the lens was extracted with the loop and a hook through an incision below. The nucleus was broken up and probably some fragments remained. No vitreous was lost. The eye continued to be irritated and congested, and two months later showed signs of shrinking, with vision of light perception only. Skin tests made before the operation were negative, and a repetition of the test two weeks later was also negative in all dilutions.

Mr. P. presents an instance of glaucoma during spontaneous absorption of a hypermature cataract. Tension was 70 Schiötz, subsiding after paracentesis, and permitting a view of a small nucleus in the chamber angle. Attempt to remove this was abandoned on account of fluid vitreous. After a rather severe postoperative inflammation, the eye became quiet, and vision with a cataract lens was 20/70.

The case of Mrs. C. was very similar to the preceding, but more severe in its course. When first seen, tension in the right eye was 60 and vision was light perception only. A hypermature cataract, evidently disintegrating, was present, and the eye was much congested. Three paracenteses were performed, and six hours after the last one, the cataract was removed by combined expression with a sliding flap. Pain and congestion continued severe after the operation, and as the eye had no light projection, it was enucleated. Sections of the eye showed a fairly severe infiltration of the iris, ciliary body and limbus, chiefly with mononuclear cells. No cortex was left, and the capsule contained some blood and leukocytes. The vessels of the choroid and ciliary body were much engorged. Precipitates were present on Descemet's membrane. The choroid was detached from the sclera by fibrinous fluid. The chamber angle was fairly well open.

Mr. H. had severe reactions following operations on each eye, clearing up under treatment, but recurring several times for a year after the first operation, and nine months after the second. Infected dental roots probably played a part in the later recurrences, during which vision, which was 20/40 and 20/30 after the operation, was reduced to 10/200 and 20/200. Some cortex was left, however, after each operation, and it was considered the primary cause of the reactions.

Mr. F., with a small amount of retained cortex after operation showed a fairly severe reaction, with marked congestion persisting for two weeks, but obtained vision of 20/20. A later operation on the second eye caused no marked reaction.

Mrs. H. had a very severe iridocyclitis following her operation, apparently due to a moderate amount of retained cortex. Pain and congestion persisted for more than two months, but finally cleared up, leaving numerous vitreous opacities. Vision of 20/40 was obtained.

In the case of Mr. C. the ocular reaction was less marked than that of the others in this group, but still considerable enough to be noted as unusual. Some cortex was left.

Mrs. McK., presenting a high myopia with immature cataracts, developed very severe reactions, with extreme pain and congestion, following a preliminary discission and a corneal expression, at which part of the nucleus was left. The congestion subsided only when the fragment of nucleus was absorbed. She also developed a complicating epithelial dystrophy, which reduced vision to 20/70 because of corneal opacities. It is questionable whether this was caused by the trauma or the retained lens matter, but it subsided also when the lens matter was absorbed.

As stated above, skin tests made in all these patients were negative. Since the reaction in these eight cases was not due to a special sensitivity of the patients to lens proteins, an attempt was made to discover whether the lens material itself possessed toxic properties which would effect nonsensitized individuals.

The nuclear material from Mrs. K.'s eye was emulsified in enough physiologic sodium chlorid solution to give approximately 0.10 per cent. suspension. This was tested for sterility, and 2 minims was injected into the anterior chamber of four rabbits. In the left anterior chamber of each animal was injected a similar amount of emulsion of an ordinary cataractous lens, which had caused no reaction. Two of the animals had been given three intraperitoneal injections of pig lens more than four weeks before, but gave negative skin tests. The other two animals had not been treated except by skin tests, which were negative. The injections were made with a fine needle introduced subconjunctivally, 3 drops of aqueous being allowed to flow from the needle and then 2 minims injected, the needle being left in place for several seconds and then withdrawn quickly, so that as little as possible flowed out. Though there was slight variation in the amount that remained in the chamber, every effort was made to make this as uniform as possible. Considerable reaction occurred in all the eyes injected, lasting from four to five days. In one animal the reaction was more marked in the right eye, while in three it was more marked in the left eye (ordinary cataractous lens). As it happened, the two nonsensitized animals showed the severest reactions, one eye showing considerable persistent corneal opacity, and one other a very cloudy aqueous during the reaction. Skin tests, made with both lenses, were negative in the two animals on which they were done, but in myself a slight plus reaction occurred with both, lasting twenty-four hours.

The fact that the ordinary cataractous lens caused some reactions more severe than the supposedly toxic lens suggested three possibilities:

1. Some cataractous lenses are especially toxic, such a one having been accidentally chosen here for a control.
2. All cataractous lenses are toxic when injected in this way.
3. All lens protein is toxic.

To investigate these questions, sixteen rabbits were injected by the technic described above, cataractous lens being used in the right eye, and normal pig lens in the left. The toxic properties of eight ordinary, mature, senile cataractous lenses, from patients who had shown no unusual postoperative reaction, were thus investigated, two rabbits usually being injected with 2 minims of a 10 per cent. emulsion of each lens. Twelve normal rabbits were used for the injections, which in ten cases were successful in that approximately the same amount of material remained in each eye. Four animals which had received previous injections subcutaneously or intraperitoneally were also injected. All the animals showed some reaction in one or both eyes. Of the normal group, this was the same in both eyes in five animals, and more marked in the right eye in five. All four of the previously injected animals showed a much more marked reaction in the right eye, three showing no reaction in the left and one a very slight reaction. None showed a more marked reaction in the left eye. The reactions varied in intensity, from a marked congestion around the greater part of the limbus only, to more congestion with fibrinous exudate in the pupil, with, in several cases, a cloudiness of the cornea and marked hyperemia of the iris. None of the eyes included showed hypopyon or anything resembling a purulent infection,[5] and all cleared up within from three to seven days, the fibrin in the pupil and corneal opacity persisting a week longer in several cases. There was no difference in severity of reaction between the normal and previously injected group. Skin tests done on most of the animals were slightly positive only twice, in both cases to the cataractous lens only, so that even the lenses which produced severe ocular reactions were not toxic enough to cause marked dermal reactions. Of the different cataractous lenses used, three caused the most severe ocular reactions, these being somewhat less severe with the other five lenses. This might indicate a greater toxicity of these particular lenses, but the number of animals injected is too small for this to be definitely stated.

The results do show, apparently, that cataractous human lens is much more toxic than normal pig lens, since, of the fourteen eyes injected, nine showed more marked reaction to the cataractous lens. It would seem, however, that normal lens matter also possesses irritating properties, since nine eyes developed some reaction from it, usually slight, but fairly marked in several cases. If these small injections of cataractous lens material could produce such definite ocular reactions, it seems reasonable to suppose that the continuous absorption of a cataract over a longer period, or the leaving behind of relatively large amounts of lens material at operation, could easily account for the inflammations seen in our patients who were apparently not sensitive to lens protein. The reaction in these cases would then be a purely chemical one, with no relation to anaphylaxis.

The exact nature of this toxic or irritating principle, and why it occurs in larger amounts in the cataractous than in the normal lens, could be answered definitely only by chemical analysis of the lenses causing these reactions, which it was not possible to do in my cases. A certain amount of evidence is afforded, however, by other work on the chemistry of the lens. The idea that lens remains left at cataract operations are toxic is not new and was held by Lagrange and Lacoste and by Elschnig and Ulbrich to explain those reactions not caused by bacteria. Harold Gifford,[6] describing seven cases of glaucoma with severe inflammatory symptoms due to spontaneous absorption of cataract, concludes that the cortex, when freed in the aqueous, exerts a marked chemotactic influence. He believes it is not the mechanical effect of the lens that causes iridocyclitis in cases of dislocated lens, but the toxicity of the cortex or the broken down nucleus, which he has also seen cause severe reactions. The disintegration of parts of the nucleus, in fact, caused very severe attacks of pain, congestion and increased tension in a number of cases. Such an attack would subside when the disintegrated fragment had absorbed, to recur with equal severity when more disintegration had occurred, and these attacks would continue until the whole nucleus had absorbed. Schwenk,[7] describing a case of "hyperactive" cataract, is of the same opinion. Straub[8] investigated the question thoroughly, and his histologic examinations proved definitely that uninfected lens material may act as a pyogenic substance calling forth a secondary iridocyclitis of a special type, which he called endophthalmitis phacogenetica. He believed that both normal and cataractous lens material can be toxic when brought in contact with the aqueous, and his attempt to immunize a patient with lens protein was directed against the toxin, with no idea that the patient might be specially sensitized to it. He brings out the effect of this toxic lens substance in eyes with dislocated lens, those undergoing so-called spontaneous cure of cataract, and believes it may also be important in old blind phthisical eyes which become irritated.

Since we know that some of the amino-acids produced in the breaking down of any protein are distinctly toxic, it is natural to suppose that some of these toxic products may be freed when lens protein comes into contact with the aqueous. Clapp[9] proved that the aqueous contains a proteolytic ferment capable of splitting lens protein into simpler components, as shown by an increase in free nitrogen. He found, furthermore, that the lens itself evidently contains a similar ferment. Goldschmidt[10] isolated a cystein compound, glutathion, from the lens, a reducing agent which disappeared with advanced age and in cataractous lenses. One theory as to the cause of cataract rests on the conception of a gradual breaking down of the lens proteins by autolysis, in split products collecting in the central portions where metabolism is slowest. Burdon-Cooper[11] found tyrosin regularly in the lens and in the aqueous after discission, and states that crystals resembling leucin and tyrosin have been found in the cataractous lens.[12] The crystals described by Gabrielides[13] in hypermature cataract were probably of similar nature. Other evidence of a difference in composition between the normal and cataractous lens is given by Jess.[14] He found that the water soluble albumins of the lens, A and B crystallin, are greatly diminished in senile and especially cataractous lenses, while the insoluble albuminoids, containing large amounts of arginin, are greatly increased. B crystallin, containing cystein, is almost entirely absent from these lenses, being present only in a narrow zone under the capsule and absent entirely from the nucleus. He thinks the amino-acids formed from the crystallins in their natural autolysis pass through the capsule into the aqueous, while the components of the albuminoids remain. The presence of greater amounts of albuminoid in the central portions and less crystallin was previously found by Mörner.[15]

These findings, while they do not show exactly what is the toxic component of the cataractous lens, afford some basis for a belief that the split products resulting from the autolysis of the lens are responsible. This would explain the clinical observation that material from hypermature cataracts causes much greater reactions than from immature ones, that discissions on juvenile cataract seldom cause reaction, and that in senile cataract the greatest reactions occur when portions of the nucleus are left in the eye. While in sensitized persons it may be true, as Verhoeff and Lemoine suggest, that clear lens material may cause the greater reactions, this is certainly not in accord with clinical observations in the majority of cataract cases in which the reactions would seem to be due to these split products. The fact that retained lens rests cause reaction in some patients and not in others may be explained by differences in the process of autolysis, certain amino-acids being formed in greater amounts under certain conditions such as reaction of the tissues and rapidity of cataract formation.

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[5] Two eyes not included developed a slow infection.

[6] Gifford, Harold: Am. J. Ophth. **1:** 83 (Feb.) 1918.

[7] Schwenk: Ophth. Rec. **26:** 465, 1917.

[8] Straub: Over Outstekingen door Oplossing van Lensmassa, etc., Amsterdam, 1919.

[9] Clapp, C. A.: Am. J. Ophth. **7:** 131 (Feb.) 1924.

[10] Goldschmidt: Arch. f. Ophth. **113:** 160, 1924.

[11] Burdon-Cooper, J.: Brit. J. Ophth. **6:** 385 (Sept.) 1922.

[12] I thought these split products might be estimated quantitatively by dialyzing lens substance, and determining the total nitrogen of the dialysate. In a number of cataractous lenses tested, however, the small amounts found in the dialysate were almost the same as when a similar amount of pig lens was dialyzed. The total nitrogen of the lens substance itself left after dialyzing corresponded well to the 16 per cent. of dried substance found by Balling (Ztschr. f. phys. Chem. **108:** 186, 1920). Evidently the split products, if dialyzable, are absorbed through the lens capsule as soon as formed.

[13] Gabrielides: Ann. d'ocul. **161:** 561, 1924.

[14] Jess: Arch. f. Ophth. **105:** 428, 1921; Ztschr. f. Augenh. **46:** 237, 1921; Ophth. Ges. Heid., 1920, p. 224; Arch. f. Ophth. **109:** 463, 1922.

[15] Mörner, quoted by Jess (Footnote 14).

SUMMARY

1. Of eighty-six patients tested with lens protein, 12.6 per cent. gave positive dermal reactions.
2. Of those giving positive skin tests, six showed unusual postoperative ocular reactions, which may well be interpreted as due to their sensitization to lens protein. In a further case with a very severe reaction there *seemed no doubt of this.*
3. It was found possible to sensitize animals by injections of lens protein, so that discission produced an increased ocular reaction; but this occurred most often in animals treated so intensively as to be immunized to lens protein.
4. In eight patients with negative skin tests, ocular reactions, apparently due to absorbing lens matter, occurred, indicating some toxic factor, not depending on anaphylaxis, in the lens matter itself.
5. Normal lens matter showed toxicity when injected into the anterior chamber of the eyes of animals, but cataractous lens matter was apparently much more toxic, nine of fourteen animals showing more marked reactions from the cataractous lens, and none more marked from the normal lens.
6. There is evidence that autolysis of the lens proteins occurs, with the production of leukomains and allied products, which may be toxic, and that the chemical differences between cataractous and normal lenses can explain the greater toxicity of cataractous lens matter.
7. While endophthalmitis phaco-anaphylactica, in the sense of Verhoeff and Lemoine, undoubtedly does occur, a large number of reactions to lens substance cannot be explained as anaphylactic, and perhaps a majority of such reactions are due to the toxicity of lens matter itself. Hence a better name for the whole group of reactions is that of Straub, "endophthalmitis phacogenetica."

ABSTRACT OF DISCUSSION

Dr. F. H. Verhoeff, Boston: The observations made by Dr. Gifford confirm, in the main, those of myself and Lemoine. The percentage of positive skin tests obtained in a series of eighty-seven selected patients, 12.6, seems too high in view of the fact that we have never obtained higher than 8 per cent. Possibly this may be explained by a considerably higher average age of the patients. The ages, however, are not given. Another possibility is that some of the reactions were due to infected powdered lens substance. It is extremely difficult to insure sterility of the latter, and we have ourselves at times obtained atypical reactions due to this cause. This may be the explanation of the markedly positive skin test persisting over seventy-two hours in the case of the authors in which no ocular reaction occurred after cataract extraction in spite of retention of a good deal of lens cortex.

The authors state that, in eight patients with negative skin *tests, ocular reactions* occurred. On referring to the details briefly given of these cases, I find that in three there were hypermature cataracts. In our first paper we pointed out that hypermature cataracts possessed toxicity and produced inflammatory reactions not dependent on hypersensitiveness to lens protein. In the fourth case of the authors, dental infection is admitted as a probable cause. In the fifth case, congestion persisted only two weeks and vision of 20/20 was obtained, and in the seventh case, the ocular reaction was still less than this. Thus, exclusive of reactions due to hypermature cataracts, there were only two cases out of seventy-six with negative skin tests in which ocular reactions of any severity occurred. Moreover; in the only really serious case of ocular reaction due to retained lens substance reported by the authors, there was a markedly positive skin test. My own conclusion from these observations would be that in the absence of hypersensitiveness to lens protein on the part of the patient, retained lens substance has remarkably little irritating effect on the eye. And in view of the well known frequency with which cataractous lens matter is left in the eye without causing serious reactions, I should assume that there must be some explanation other than toxicity of such lens matter for the two cases in question. Eyes vary so greatly in the reactions they show after operative intervention that it is often difficult to determine whether retained lens substance is a causative factor or not. I believe, however, that, even in the absence of hypersensitiveness recognizable by skin tests, lens substance can produce a certain amount of intra-ocular reaction, but never of a serious nature.

The animal experiments reported by the authors seem to me inconclusive.

I hesitate to accept at their face value the experiments on rabbits made by the authors in which they obtained greater reactions in eyes injected with cataractous than those injected with normal lens substance. For it seems to me it would be impossible to remove cataractous lens matter from a human eye at operation in such a way as to keep it completely sterile. In fact, the authors state that two eyes, not included, developed a slow infection. It seems unfortunate that none of the animals' eyes were examined microscopically. The authors state that we assumed organ specificity for the lens. Aside, possibly from our introductory remarks on the work of other investigators, I can find nothing in our paper to warrant this statement, and certainly our work and conclusions were not in any way based on it.

Dr. Arnold Knapp, New York: During the past year I have selected eleven cases that developed iritis after cataract extraction and had retained cortex for the lens protein test. Of these cases we obtained a skin reaction in only two. These two cases were not serious and went on to recovery. Dr. Gifford's paper is extremely interesting and valuable. At the same time I think the subject is a very difficult one. I should like to ask him, What is the smallest degree of skin reaction he regards as positive, and, second, does the iridocyclitis anaphylactica have any clinical manifestations which are peculiar? In connection with a case reported by Dr. Gifford, I should like to mention the following experience: A man of 60 had a traumatic cataract from an intra-ocular foreign body. The foreign body was extracted by the giant magnet and the patient was discharged until the lens was mature enough to operate. He returned a few weeks later with glaucoma. The posterior capsule had ruptured, and nucleus and cortex were floating in the vitreous. The glaucoma did not respond to ordinary medical remedies, and in desperation a paracentesis was performed which reduced the tension. The patient was kept on his face for the greater part of each day hoping that the nucleus would return into the anterior chamber. This did not occur, but there was no further trouble. The cortex was absorbed, and although the nucleus remained visible with the ophthalmoscope for at least five months, now seven months since the injury his vision is 20/30 and the eye is quiet and there is no indication of tension. The nucleus can no longer be seen even with dilated pupil. In this case the skin lens protein test was negative.

Dr. Albert N. Lemoine, Kansas City, Mo.: Since publishing our last work on phaco-anaphylactic endophthalmitis in 1923, I have seen *only three* cases with severe inflammatory reaction, following cataract extraction. Two of these were sensitive to lens protein; the third was a diabetic patient whose blood sugar had been reduced to normal by insulin and diet before operation. This patient was not sensitive to lens protein.

In all the cases published in our former papers, we spared no effort to eliminate all other causes of inflammation and excluded several cases in which we found more than one factor involved. While I was on the service of Dr. Derby, he had a case of perforating wound of the cornea and lens. This patient gave a positive test to lens protein. He later developed a severe intra-ocular inflammation. In view of the work we were doing, Dr. Derby removed the lens, which was surrounded by exudate. It was sectioned and stained and found to contain bacteria. That case was not included in the report because we were not positive that there would have been any inflammation had there been no infection. I wish to confirm the points brought out by Dr. Verhoeff in his discussion. In our original paper we not only called attention to the fact that the inflammation following rupture of the lens capsule in morgagnian cataract was not anaphylactic in origin, but also discussed the differential histopathology in the two types of inflammation.

Dr. Sanford R. Gifford, Omaha: The lens substance for skin tests was obtained from pigs' eyes under sterile precautions. They were tested repeatedly for sterility, and only those were used which proved sterile. When the dilutions 1:10, 1:100 and 1:1,000 were used, a definite positive test showed a large urticarial wheal with 1:10 and a small one with 1:100 and a slight one with 1:1,000. The human cataractous lenses used for animal experimentation were picked up with forceps as they presented before touching the lids, and put in a sterile bottle; cultures were taken for sterility. Of course, a negative culture does not guarantee that they were sterile, but they were obtained under practically the same conditions as the pig lenses and so may be assumed to be as sterile. Dr. Verhoeff mentioned in his original report that hypermature cataracts were the most toxic type. I would interpret this as evidence of a process of autolysis going on in the cataractous or possible precataractous lens, which reaches its highest degree in the hypermature cataracts. It seems reasonable that if hypermature cataracts are very toxic, mature cataracts may also be somewhat toxic. I do not see any reason why in these cases of patients with hypermature cataracts causing ocular reaction we should not consider the reaction due to absorption of the lens material. In cases reported by my father, he observed that when particles of the lens began to peel off, an acute attack of inflammation occurred, and when these were absorbed, the reaction would subside. We used rabbits for the test because we could observe their eyes better, considering that the traumatism of a discission on the small eye of a guinea-pig would be rather severe and the reaction would be hard to read. As to Dr. Knapp's question about the clinical feature of the cases, they simply showed a congestion, pain and the presence of absorbing lens material in the eye. Some showed increased tension, especially those with hypermature cataracts. The reason sections of the rabbits' eyes were not made was that in them the reaction subsided after a period of from two to three weeks after the small amount of lens material injected was absorbed. If the lens material had been infected the inflammation should not have subsided but should have gone on to panophthalmitis.

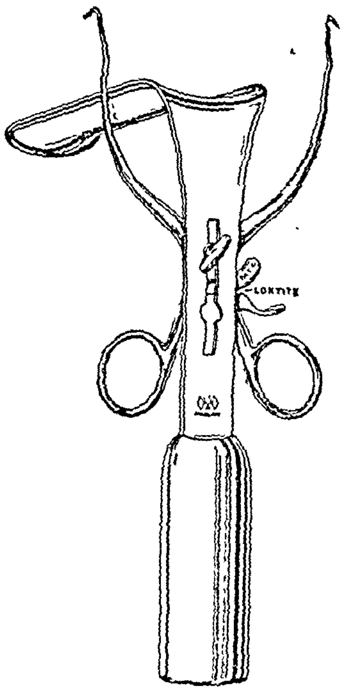
Pathology of Dysentery.—The richness of the polymorphonuclear exudate in the presence of a proved infection with *Entamoeba histolytica* or with *Balantidium coli* is in direct proportion to the activity of any pathogenic bacterial organism that is associated with lesions produced by the protozoon. Any conspicuous number of leukocytes always indicates one of two things: 1. An infection with *Bacillus dysenteriae* superimposed upon a preexisting amebiasis or balantidiosis, in which case the leukocytic exudate will be massive, will contain phagocytic macrophage cells, and will show evidence of toxic necrosis. 2. A less malignant secondary bacterial infection of amebic or balantidial ulcers, in which event the leukocytic exudate will be relatively scant and diffuse, and phagocytic macrophage cells and evidence of necrosis will be absent.—Haughwout.

Clinical Notes, Suggestions, and New Instruments

THE GELPI-BUBIS WEIGHTED VAGINAL SPECULUM

J. L. Bubis, M.D., Cleveland

This is a two-piece instrument consisting of the Gelpi perineal retractor supplied with a Haslam Loktite locking device and thumb-set screw over which the groove of the Bubis weighted speculum is placed into position.



Gelpi-Bubis weighted vaginal speculum.

The instrument has been given a thorough trial at the Mount Sinai Hospital of Cleveland in all gyneplastic operations. It is especially adaptable for the repair of the cervix and cystocele and also for vaginal hysterectomies. The amount of tension and exposure of the vagina are easily controlled, and at least one assistant can be dispensed with during the operation.

The Gelpi perineal retractor is first placed in position and the Bubis weighted speculum is superimposed and fixed in the right position with the thumb-screw.

302 Seventy-First-Euclid Building.

HERNIA IN A WOMAN 104 YEARS OLD

G. W. Cottis, M.D., Jamestown, N. Y.

Mrs. A. P., born 1820, had a right femoral hernia, which became strangulated in 1851. A messenger was sent on horseback to Dunkirk, 30 miles away, for a surgeon, whose name has been forgotten. An operation relieved strangulation, but hernia promptly recurred. Strangulation occurred again in 1865. An operation was done by Dr. Cornelius Ormes, with reduction of the strangulated bowel. The hernia persisted, and in 1893 strangulation necessitated a third operation, which was performed by Drs. Rice and Scofield. From this time on the hernia grew progressively larger until the sac, when distended, was as large as a coconut. It was impossible to retain the contents after reduction, and the patient learned to reduce the hernia when the pressure became sufficient to cause pain. Her family physician was called with increasing frequency as reductions became more difficult. March 2, 1924, the hernia became irreducible. The symptoms of intestinal obstruction developed rapidly, with great distention of the abdomen and severe vomiting. The patient refused to go to the hospital, and an operation was performed in her bedroom.

Under procain anesthesia, the sac was opened and found to contain a large mass of small intestine and mesentery. The loops of bowel were adherent to one another, and the mesentery was edematous and so swollen as to prevent reduction from below. The abdomen was opened and the femoral ring enlarged as the result of cutting the fibers of Poupart's ligament. By traction from above and taxis from below, the entire mass of bowel and mesentery was drawn into the abdomen. The neck of the sac was divided and the peritoneum closed from above with chromic catgut. The femoral ring was closed with kangaroo tendon sutures. The large sac, which was thick and fibrous and firmly attached to the tissues of the thigh, was left undisturbed. A few days later, the sac became distended with serous fluid. It was then widely opened and packed with gauze, which was removed gradually during the next ten days. Uneventful healing followed. On account of the great age of the patient (103 years 8 months), she was lifted from her bed into a chair on the third day. She began to walk two weeks after the operation, and at the present time, fifteen months later, there has been no recurrence.

In November the old lady insisted on going to the polls and voting for the President. June 20 of this year she was 105 years old, and she is still active enough to work in her flower garden every day.

Special Article

REPORT OF COMMITTEE ON OTO-RHINOLOGIC HYGIENE OF SWIMMING *

The Commitee on Otorhinologic Hygiene of Swimming begs leave to submit the following report:

The healthfulness of swimming as an exercise is undeniable, but the human body lacks adaptation to sojourn in water, and means for its protection are, therefore, necessary.

Public health authorities, in most of the states, have promulgated adequate rules for the construction, maintenance and bacteriologic examination of swimming pools and bathing places.

In certain states, notices are now suggested or prescribed, "warning persons with colds, head infections, running noses or ears or catarrh, that swimming or diving tends to force infection into the sinuses or ears, resulting in serious, if not fatal, consequences." The use of such notices should be suggested to the public health authorities of all the states.

It is suggested that oiled wool or other effective methods of closing the external auditory meatus be advised, in order to prevent external otitis.

It is further suggested that improper swimming or diving habits (such as inbreathing when the head is more or less submerged; diving feet first with nostrils open; blowing the nose, coughing or hawking into the tank) should be forbidden by public health authorities.

Research has disclosed rapid lowering of body temperature and hence of resistance to infection, both from immersion and from exposure of the body in wet bathing suits; it is therefore suggested that a time limit of from forty-five minutes to one hour be placed on use of a pool by each bather in order that:

1. The number of bathers at any given time (bathing load) may be reduced.
2. The loss of body heat due to chilling may be minimized.

It is further suggested that the Bureau on Health and Public Instruction, and the editors of *Hygeia* be advised of these recommendations and requested to cooperate with a committee of this section in the preparation of standard posters, notices and articles on the proper technic of swimming and diving, including breathing habits; methods of getting rid of water; methods of keeping water out of the ears and nose; physical effects of exposure and immersion in normal adults and children, and the relation of swimming and diving to recurrent colds, chronic accessory sinus disease, otitis and deafness.

In this connection, the services of noted experts, both teachers and record holders in these valuable sports, should be secured, with the collaboration of members of this section. Suggested texts of posters and certain state regulations of approved purport are appended hereto.

Respectfully submitted.

H. M. TAYLOR, Jacksonville, Fla.
Chairman.
HILL HASTINGS, Los Angeles.
M. F. ARBUCKLE, St. Louis.
LEE M. HURD, New York.
RALPH A. FENTON, Portland, Ore.

APPROVED FORM OF NOTICE

In order to maintain proper standards and protect the health of patrons, it is necessary to insist on observation of the following rules, which are approved and their strict enforcement required by the ——— State Board of Health:

Warning: Persons with colds, head infections, "running nose or ears," catarrh, are warned that swimming, diving, etc., tend to force the infection into the sinuses or ears, and result in serious if not fatal complications.

1. All bathers shall use shower baths, including soap, if necessary, before entering the plunge. (The plunge is not intended as a bath tub.)
2. Bathers who have been outside the bath house or plunge enclosure shall not reenter without passing through a foot bath and using a shower.
3. Bathers shall be forbidden to wear private bathing suits that are not properly laundered; light colored or undyed wool is suggested.
4. Women shall wear caps while in plunge.
5. Persons not dressed for bathing shall not be allowed on walks surrounding plunge, and bathers shall not be allowed in places provided for spectators.
6. No person suffering from a fever, cold, cough or inflamed eyes shall be allowed the use of the plunge. (These disorders may be transmitted to others.)
7. No person with sores or other evidence of skin disease, or who is wearing a bandage of any kind, shall be allowed the use of the plunge. (A bandage may conceal a source of infection.)
8. Spitting in, or in any other way contaminating, the plunge, and spitting on floors, runway, aisles or dressing rooms shall be prohibited.
9. Public combs or brushes shall not be furnished, and such articles left by bathers shall be permanently removed.
10. Eating within the plunge enclosure shall be prohibited.
11. Bringing or throwing into the plunge any objects that may in any way carry contamination, endanger safety of bathers, or produce unsightliness, shall be prohibited.

The majority of our patrons will observe these rules of their own accord and will render us a great service by reporting any infractions to the attendants. Any person failing to comply with the foregoing rules will be immediately expelled and denied the future privileges of the bath house.

RULES FOR SANITATION AND SAFETY OF SWIMMING POOLS

1. All swimming pools are to be maintained with a practical minimum amount of contamination. There shall be not more than 1,000 colonies per cubic centimeter of standard agar medium after incubating for twenty-four hours at 37 F. The *B. coli* content shall be such that gas is produced in not more than one and a half of standard lactic broth cultures after incubation for twenty-four hours with 1 c.c. of water.
2. Water in the pool shall at all times of use be sufficiently transparent, under existing lighting conditions, that when the water surface is not excessively agitated by bathers, a person can stand at the side of the pool and see the bottom distinctly where the depth of water is 6 feet or less.
3. Facilities for adequate protection of the pool water against unnecessary sputum contamination by bathers shall be provided.
4. All persons known to be or suspected of being affected with infectious diseases shall be excluded from the pool.
5. Contamination of the pool resulting from lack of personal cleanliness of bathers shall be maintained at a minimum.
6. Construction and appliances shall be such as to reduce to a practical minimum the danger of drowning and of injury to bathers from falls or collisions.
7. Dressing rooms, hallways, toilet rooms, shower rooms and other places to which patrons of a bath house have access shall be kept clean and well ventilated at all times.
8. Bathing suits and towels, when distributed to bathers by the pool management, shall be clean and free from excessive bacterial contamination.
9. The management of the pool shall have printed and posted in conspicuous places about the establishment notices briefly informing patrons of the requirements to which they are subject in the maintenance of a safe and sanitary pool. A form of notice is suggested to pool operators; it should be so placed that all bathers cannot fail to read it before entering the pool.

The committee submitted suggestions for appropriate posters and warning notices, which appeared in the July and August issues of *Hygeia*.

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

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SATURDAY, AUGUST 1, 1925

THE NEW WOODS HOLE LABORATORIES

Abraham Flexner[1] has recently remarked that medicine, moving as rapidly as may be toward scientific status, recognizes no difference in intellectual attitude between laboratory and clinic. Medical research is not confined to the materials and problems that are furnished directly by patients. There are few of the natural and physical sciences from which medicine does not borrow; indeed, its modern development is closely bound up with the progress of the biologic disciplines. Many of the fundamental features of life are involved in the function of a microscopic bit of protoplasm, like that of the ameba, quite as intricately as in the behavior of the more complex higher organisms. The time has passed when the study of the simpler forms of life, their anatomy, physiology, life history and genetic relationships, is to be regarded as remote from human interests and problems. Thus it happens that the paths of approach of the medical worker in his study of morphologic changes in the body, such as the pathogenesis of neoplasms, the hypertrophy of a tissue, or the atrophy of an organ, may lead to the same center of interest that attracts the technical zoologist or botanist. Heredity and evolution, daily themes of the latter, are equally significant in the contemplations of the physician.

Accordingly, American medicine must share with the biologic sciences in the pride and satisfaction growing out of the formal opening of the new quarters of the Marine Biological Laboratory at Woods Hole, Mass., formally dedicated, July 3. With a plant and investments representing two million dollars, the Woods Hole organization approaches the foremost rank among the workshops devoted to the study of living nature. There investigators representing the advance guard of the biologic sciences can find welcome, opportunity, unique facilities and personal stimulus for the exploration of protoplasm in its varied manifestations. There will be found abundant inspiration to outdistance the descriptive technic of the older biologists, who rarely depended on the microscope or the indirect analysis of the biochemist. The most intimate features of the protoplasm remain to be explored by recondite methods, just as the newer chemistry and physics have penetrated what was once supposed to be the impenetrable barriers of the atom.

Like most that is good, the Marine Biological Laboratory is not a product of mushroom growth but the outcome of a steady development from humble beginnings. Like some of the foremost biologists of the past generation, it came in the wake of the little group whom Louis Agassiz assembled at Penikese Island half a century ago.[2] For more than a quarter century Jacques Loeb pursued part of his researches at the Woods Hole laboratories. Scores of investigators still living have received training and inspiration there. American science will rejoice in the opportunities, now greatly enlarged, that remain.

BILE PIGMENT AS AN EXPRESSION OF BLOOD DESTRUCTION

Until recently, contemplation of the pigmentation of the skin and the urinary excretion of bile pigments in jaundice has almost invariably awakened thoughts of the liver and the failure of the hepatic functions which such symptoms have indicated. The newer knowledge of the origin and behavior of one of the components—the bile pigment, bilirubin—responsible for the manifestations described is likely to direct attention to further features of the pigment production and migrations in the body. Though it is conceivable that a variety of chemically related substances, such as the plant pigment chlorophyl, may act as precursors of the bile pigment, at present the only known source is hemoglobin. Furthermore, we are for the present committed to the belief that bilirubin may be formed from hemoglobin outside of and independently of the activity of the liver cells, so that its genesis from hemoglobin may have a diversity of sites outside the hepatic epithelium.[3]

As Rich[4] recently expressed the situation, hemoglobin spilled into the tissues almost anywhere in the body may be transformed, locally, into bile pigment; and the presence of an excess of hemoglobin in the circulation, whether introduced in pure form experimentally or liberated during hemolysis in pathologic conditions, is regularly followed by an increased formation of bile pigment. Consequently, if the production of bilirubin from hemoglobin and its subsequent excretion by the liver were a sort of "house cleaning" device for ridding the organism of effete blood pigment, the occurrence of bile pigment would be brought into new relationships. Rous and Drury[5] have pointed out recently that the amount of bilirubin present from day to day in the bile constitutes an immediate, if not entirely accurate, index to the amount of blood destruction, whether this is in part the consequence of pathologic influences or merely the result of ordinary corpuscular wear and tear.

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[1] Flexner, Abraham: Medical Education, New York, the Macmillan Company, 1925.

[2] A description of these early days is given in David Starr Jordan's The Days of a Man.

[3] The Formation of Bile Pigment, editorial, J. A. M. A. 85:271 (July 25) 1925.

[4] Rich, A. R.: The Formation of Bile Pigment, Physiol. Rev. 5:182 (April) 1925.

It follows from this that, other things being equal, the manifestations of jaundice arising from bile retention will to some extent be conditioned in degree by the amount of blood destruction that takes place. Rous and Drury have, in fact, observed that the jaundice of bile retention is far less pronounced during secondary anemia than when the patient is full blooded, other things being equal. Experimentally induced losses of red cells, they note further, find expression at once in a lessened accumulation and urinary excretion of bile pigment. As regeneration of hemoglobin takes place in cases of obstructive jaundice, the amount of bile pigment increases *pari passu* both in plasma and in urine. "Corpuscular wastage" finds a direct expression under such circumstances through variations in bilirubinemia and bilirubinuria.

PLANT PATHOLOGY AND MEDICINE

Medicine has taken a large toll of inspiration as well as information from physics, chemistry, zoology and botany, which have supplied innumerable impulses to development; indeed, like hygiene, medicine is a sort of superstructure built on their accomplishments and developed by their methods. If medicine is grateful to physics for the roentgen ray, to entomology for indispensable knowledge of the life habits of the malaria-bearing mosquito, or to horticulture for the development of useful digitalis leaves, she must be ready to promote the independence of the sciences. For, as Lord Moulton[6] has remarked, the more intricate the subject matter, the more necessary it is that those engaged in the research should be free to investigate the whole field fully and exhaustively.

At present, medical research is receiving an unmistakable impetus from the domain of plant pathology. Though transmissible diseases are generally considered to be due to the invasion of specific forms of germ life, there is a considerable number of maladies, in both the animal and the plant world, in which no germ cause has as yet been found. One of the most perplexing of these in the relation of plant life is the trouble that is commonly known as "mosaic" disease. The causal agent, though still of unknown nature, seems to be established as a "filtrable virus." Mosaic diseases are important economically in the culture of many plants. Potatoes, tobacco, sugar cane, tomatoes and cucumbers are seriously affected by such maladies. The mosaic disease expresses itself most commonly by mottling of the leaves, as a consequence of the alternating light green and dark green areas produced. Stunting and malformation are also common symptoms. These diseases are infectious, being commonly carried from plant to plant by plant lice, and can also usually be readily transmitted artificially. This provides a welcomed opportunity to supplement the study of the development and behavior of filtrable viruses in general through the use of the plant as the test agent.

It has already been suggested through Olitsky's[7] investigations at the Rockefeller Institute for Medical Research that in tobacco mosaic there is a particulate multiplying organism rather than a "fluid contagium." E. F. Smith,[8] who has long been among the small minority of ardent defenders of the parasitic origin of cancer, points to the newer contributions on the behavior of mosaic disease in plants as an incentive to continue the search for tumor-producing agencies by the technic afforded thereby; indeed, he points to Gye's recent as yet unpublished work in London as a challenge to those who are contented to champion the more popular theories of cancer production. The latter believe the cancer cell to be, so to speak, "a normal cell with the brakes taken off"; whereas the protagonists of parasitic factors regard it, chemically and physically, as "an abnormal cell, the driving power of which is some extraneous influence more powerful than the physiologic control which normally keeps all the organs and tissues of the body in harmonious cooperation." Incidentally, it is of interest to learn from recent experiments by Johnson[9] in Wisconsin that apparently healthy plants may carry a "repressed" filtrable virus that will "take" on other plants. One is thus reminded of healthy bacterial "carriers" among human beings.

THE REACTION OF LIVING CELLS AND TISSUES

Acidity and alkalinity have been subjected to a revised interpretation and have come to have a new importance in modern biologic science. At the end of the last century it was customary to ascertain the reaction of fluids by titration. On this basis the alkalinity of the blood, for example, was represented to be of an order that is now regarded as erroneous. The method of titration, a recent writer[10] succinctly explains, merely informs us of the quantity of bases that are present either uncombined or else combined with acids, such as carbonic acid, which are displaced from their compounds by the stronger acids used in titration. If all the bases are present in the free, uncombined form, then, in dilute solutions at all events, the true alkalinity or hydroxyl ion concentration may be fairly accurately estimated to be equivalent to the amount of acid required for neutralization. But this is not all the case if the bases are partially or wholly combined with weak acids, because in that event the addition of the acid employed in titration displaces the weak acid, which, when uncombined, by reason of its slight dissociability, ceases to affect materially the reaction of the fluid. The titratable alkalinity of the blood, therefore, bears no relationship to its actual alkalinity, or hydroxyl ion concentration. It does, however, bear some relationship to the power of the blood to maintain its neutrality—in other words, to the alkali reserve of blood.

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[5] Rous, Peyton; and Drury, D. R.: Jaundice as an Expression of the Physiological Wastage of Corpuscles, J. Exper. Med. **41**: 601 (May) 1925.

[6] Science and the Nation, Essays by Cambridge Graduates with an Introduction by the Right Hon. Lord Moulton, Cambridge University Press, 1917.

[7] Olitsky, P. K.: J. Exper. Med. **41**: 129 (Jan.) 1925.

[8] Smith, E. F.: Some Newer Aspects of Cancer Research, Science **61**: 595 (June 12) 1925.

[9] New Pages in Farm Progress, Annual Report of the Director 1923-1924, Agricultural Experiment Station, Univ. of Wisconsin, Bull. 373, April, 1925, p. 6.

[10] Robertson, T. B.: Principles of Biochemistry, Philadelphia, Lea & Febiger, 1924.

As a consequence of these distinctions, numerous efforts have been made in recent years to ascertain the hydrogen or hydroxyl ion concentration of the tissues and fluids of the body in health and disease. Even slight variations in these physicochemical factors are known to attain a considerable significance in altering physiologic reactions; and the organism is admirably equipped with chemical and other regulatory devices to prevent any considerable deviations from whatever may be normal for the mediums in which the characteristic changes of the organism take place. Some of the bodily mechanisms, the respiratory center, for example, are exceedingly reactive to very small variations in hydrogen ion concentration.

It has been demonstrated that the reaction of the blood, measured by the newer standards, approaches a "neutrality" of significantly constant character. For blood plasma the condition is represented by p_H 7.38, or somewhat on the side of "alkalinity." The use of suitable indicators intra vitam, including dyes that find entrance into tissues and the cells themselves, has afforded interesting information regarding the conditions of reaction obtaining there. Whereas plasma, lymph, peritoneal fluid and edema are, as one would expect, demonstrably alkaline, the cytoplasm of cells usually betrays an acid reaction. According to Rous[11] of the Rockefeller Institute for Medical Research, who has succeeded in inducing an entrance of litmus and other indicators into living cells, the acidity of some of the contents may be considerable during life. In some cases a p_H of 3.0 or less was indicated. Such vital staining demonstrates anew, according to Rous, that the intracellular reaction during life is independent of that of the body fluids in which the cells are, so to speak, continually bathed. Already there are suggestions that through the niceties of such observed vital staining reactions it may become possible to distinguish between living and dead cells—perhaps between vigorous and decadent ones. With the further development of the new technic, it is conceivable that the active morphologic components of the body may be compelled to betray the secrets of their reactions in minute ways not heretofore subjected to such direct observation.

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[11] Rous, Peyton: The Relative Reaction Within Living Mammalian Tissues, J. Exper. Med. **41**: 389, 399 (March), 451 (April) 1925.

Current Comment

THE INDISCRIMINATE USE OF ROENTGEN RAYS

The dangers attending the indiscriminate use of roentgen rays need no longer be emphasized to physicians. Most of them have been confronted with evidence, sometimes of a highly distressing character, in the persons of afflicted patients. The public, on the other hand, has not yet been adequately awakened to a realization that these highly potent rays have potentialities for harm as well as for occasional benefit. The layman has not yet learned to be sufficiently wary of quacks or other persons of unethical standing who glibly advertise the unique successes of the complex electric device—the roentgen-ray machine—that awakens awe through the ominous sputter of its radiant discharges as well as through the freely circulated story of its therapeutic performances. The New York Academy of Medicine has done a real public service in its recent report on the indiscriminate use of roentgen rays in the treatment of hypertrichosis.[1] Among dermatologists the accepted method for the removal of superfluous hairs is the tedious but usually harmless process of electrolysis. Yet the academy's committee on public health has secured evidence that roentgen rays are being extensively used by commercial institutes under express guarantees of absence of harmful effects on the skin. Not only are exorbitant fees extracted from the undiscriminating and gullible public, often persons of the poorer classes among whom "good looks" are uniquely prized; but the permanent and often hazardous subsequent disfigurements actually follow. They begin as telangiectases and parchment-like atrophy, and may later go on to keratoses and malignancy. If there really are times "when ignorance is bliss," they assuredly do not include the ominous moments when a wily "beauty specialist" permits the life-killing rays of short wave length to impinge on the bearded skin of his unsuspecting victim.

HIRSHBERG—IN AGAIN AND OUT AGAIN

Probably all physicians and many laymen remember the syndicated medical articles that used to appear in newspapers credited to "Dr. Leonard Keene Hirshberg, A.B., M.A., M.D. (Johns Hopkins University)." Many years ago Hirshberg was a member of his local medical society and of the American Medical Association. As a result of some of Hirshberg's crude journalistic work, the Board of Censors of the Baltimore State Medical Society took action against Hirshberg and was about to expel him from the society when Hirshberg obtained an order from the court charging the Board of Censors to proceed no further in the matter. Then he resigned! In September, 1922, Hirshberg was arrested by the federal authorities and held on $15,000 bail, charged with being implicated in the operation of a large blind pool swindle in the East. In May, 1923, he began to serve four years in the Atlanta penitentiary, following his conviction on the charge of defrauding more than three thousand investors out of approximately one million dollars. By December, 1923, the newspapers reported that Hirshberg's friends were circulating a petition for commutation of his sentence, it being alleged that United States Senator Copeland was said to favor the movement. June 24, 1925, Hirshberg was released from the Atlanta penitentiary on parole. A week or two later The Journal received information to the effect that Leonard Keene Hirshberg was representing himself as "physician-in-chief" of the "National Health Service," a commercial organization that the Surgeon General of the U. S. Public Health Service declares is attempting to capitalize the research work done by the United States government and to confuse the public into believing that it is in some way identified with the Public Health Service of the government. (See The Journal, last week, page 279.) Leonard Keene Hirshberg, out of the penitentiary after serving only about two years of a four years' sentence, steps promptly into a scheme on the border of the twilight zone of medical practice. The lives of those who balance on the teetering edge of honesty is an ever recurring cycle of in again and out again.

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[1] Bull. New York Acad. Med. **1**: 159 (June) 1925.

EVOLUTION

The intellectual world has been regaled during the last few weeks with the spectacle of an attempt to establish scientific facts by legal decision. The procedure, while interesting, could obviously be only a fiasco. To some extent it gave opportunity for scientists of note to utilize the publicity attached to the trial for the education of those who might otherwise be but little interested in the methods and statements of science. At the recent annual session of the Association in Atlantic City, the House of Delegates formally endorsed a resolution calling for the removal of any restrictions on the teaching of science, and stating that the facts of evolution were fundamental to a proper comprehension of the basic medical sciences. The views which, no doubt, animated the unanimous approval of the Delegates, have been well expressed in a work,[1] now in its third edition and its fifth printing, by that well known leader in medical science, William Williams Keen of Jefferson Medical College, Philadelphia. In 1922, Dr. Keen delivered a commencement address at the Crozer Theological Seminary under the title, "I Believe in God and in Evolution." Recognizing that the attitude of the church, and especially of the clergy, toward science and toward the origin of man is of incalculable importance, Dr. Keen attempted to reconcile belief in a higher power with scientific fact. He made it clear that evolution antedated Darwinism and cited numerous evidences from medical literature to support the view that the cycle of evolution includes not only the development of animal life by an evolutionary process, but also a direct relationship between the growth of man and the growth of animals. He concluded finally that man's ascent from an animal of low intelligence seems to be absolutely proved by the many phenomena that reveal identical organs and identical physiologic processes in the animal and in the human body. Dr. Keen does not find this inconsistent with his own spiritual belief, nor, indeed, with his personal belief in the immortality of the soul, and many others are able to adopt a similar point of view. Regardless of one's convictions theologically it is well, in times when man's thoughts are confused by the intricacies of oratory and legal procedure, that there should be available scientific men with clear minds who are able to state their knowledge and their beliefs and to distinguish clearly between well established fact and unreasoning credulity.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ARIZONA

Sanatorium Burned.—The Desert Inn Sanatorium, at McDowell Road and Crosscut Canal, Phoenix, was destroyed by fire of unknown origin, July 12. The patients were not injured. The sanatorium was owned by Dr. Francis H. Redewill, San Francisco.

ARKANSAS

Hospital News.—A $60,000 addition to the Warner-Brown Hospital, El Dorado, has been completed, giving the hospital a total capacity of seventy-five beds.——An addition to St. Mary's Hospital, Russellville, will be constructed soon, adding about fifteen beds to the capacity of the hospital, a roentgen ray and laboratory room, and a classroom and dining room.

Health Unit on Tour.—The bureau of child hygiene of the state board of health has equipped a truck as a child health unit, which is touring the counties in northern Arkansas this summer. Dr. Margaret W. Rhode Koenig is field director of the unit and, in addition to carrying out a schedule of examinations at various towns, will cooperate with the agricultural extension division of the state university in giving health examinations for girls during four of the short summer courses. In the last sixteen months, it is said, the traveling health unit has visited eighteen counties and examined more than 6,000 children of preschool age.

CALIFORNIA

Eugene J. Rinaldo Arrested.—Special Agent Albert Carter of the state board of medical examiners recently arrested Dr. Eugene J. Rinaldo, Los Angeles, on a charge that he practiced medicine after his license was revoked, July 9, 1924. Carter declared, it is reported, that he discovered more than thirty prescriptions at a neighborhood drug store signed by Rinaldo.

Los Angeles' New Health Commission.—Dr. Michael S. Creamer has been elected president of the newly appointed health commission, Los Angeles, and Dr. Edward H. Anthon., vice president. Health Commissioner Dr. George Parrish has been made general manager of the department, in accordance with provisions of the new city charter, and will hereafter be known as health officer.

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[1] Keen, W. W.: I Believe in God and in Evolution, Philadelphia, J. B. Lippincott Company.

Professor Putti to Deliver Lane Lectures.—Prof. Vittoria Putti, director of the Rizzoli Institute, Bologna, Italy, will deliver the Lane Medical Lectures for 1925 at the Stanford University School of Medicine, San Francisco, October 5-9. The subjects will be "Congenital Dislocation of the Hip"; "Arthroplasty: History and General Considerations"; "Arthroplasty: Technic"; "New Conceptions of the Pathogenesis of Sciatic Pain," and "The University of Bologna in the History of Medicine."

CONNECTICUT

Personal.—Charles Dale Beers, Ph.D., Johns Hopkins University, and Harold Kirby, Jr., Ph.D., University of California, have been appointed instructors in biology at Yale University, New Haven.

Well Child Conferences.—During July, well child conferences were held under the auspices of the state department of health at Hazardville, Westbrook, Broad Brook, East Hampton, Windsor, Old Saybrook and Andover.

Study of the Human Foot.—A grant from the Henry B. Loomis Fund at Yale University for the promotion of research work in medicine, awarded to the department of surgery, has been used for special instruments designed for investigating the mechanics of the human foot and its disorders. The study will be conducted by Dr. Dudley J. Morton, instructor in surgery, and will attempt (1) to estimate by mechanical means the normal ratio of weight distribution to the chief bearing points of the feet; (2) to learn the variations in that ratio as associated with structural or postural changes in the feet or other parts of the body; (3) to study the effects of neurologic conditions on the equilibrium through incoordination of muscle action and other factors; (4) to devise a mechanical method of foot examination that will eliminate the personal element, and (5) to obtain a better understanding of the mechanics of the foot as a basis for progress in the treatment of foot disorders.

ILLINOIS

Chiropractor Arrested—E. E. Nordeen, a chiropractor of Dallas City, was arrested, July 16, it is reported, on a charge of practicing without a license, and was held under $300 bond.

Establishing County Health Departments.—Surg. Thomas Parran, Jr., U. S. Public Health Service, has been directed to proceed from Springfield to points within the states of Illinois and Iowa, during the fiscal year 1926, for the purpose of cooperating with state and local authorities in the establishment and supervision of whole-time county health departments.

Smallpox Map.—A county map of Illinois has been prepared by the state department of health to show the number and location of smallpox cases that occurred in the first five months of this year. This spot map showed only twenty-nine counties in which smallpox had not occurred. Madison, St. Clair and Alexander counties are filled with dots, and there is a considerable number in Pulaski, Union, Shelby, Douglas, Macon, Vermilion, Will, Ogle, Lake and Cook counties. The disease appears to be scattered throughout the state.

Health in Tornado Area.—An organization consisting of three physicians, two nurses, a bacteriologist and other assistants were still functioning in the tornado district in the southern part of the state, July 1.——Smallpox recently broke out at eight different points in the tornado area, and after about 10,000 persons had been vaccinated the area was reported to be relatively free of smallpox.——More than 10,000 persons in the tornado zone have been immunized against typhoid, the local physicians cooperating with the state health department in doing this work gratuitously.

"Dr." Beach Arrested Again.—"Dr." Perley O. Beach, Pittsfield, was arrested, July 9, on a charge of "unlawfully treating human ailments without having first secured a license." According to the Pittsfield *Republican*, Beach has practiced "drugless healing and cures" for the last twenty years in Calhoun and Pike counties at Pearl, Mount Sterling, Hersman, Versailles, Henry, Rock Island, Pittsfield and numerous other Illinois towns. He is a representative of no school of medicine but, to use his words, is "a wonder as to the human body." Among his claims are "the ability to diagnose human ailments by means of the pulse" and to "x-ray teeth with his hand." He claims to have restored "palsied arms and stiffened limbs." Beach's ambition is to found a college some day where he may impart to students knowledge "which is today possessed by no other person than himself." Beach was arrested about five years ago on a similar charge, but the grand jury found "no bill" and the case was dismissed.

Chicago

Society News.—At a meeting of the Chicago Urological Society, June 4, Dr. Harry B. Culver was elected president; Dr. Vincent J. O'Conor, vice president, and Dr. Harry C. Rolnick, secretary-treasurer.

Milk Commission Entertains Physicians.—The Chicago Medical Society Milk Commission invited physicians to free trips to the Wisconsin dairy farms, July 15 and July 29, to inspect the conditions under which certified milk is produced.

INDIANA

Society News.—Dr. Robert H. Herbst, Dr. Hugh T. Patrick and Dr. Joseph Brennemann, all of Chicago, addressed the Muncie Academy of Medicine in June on "Diverticulum of the Bladder," "Four Everyday Headaches," and "Vitamins and the Baby," respectively.

Physician Cited.—Dr. Harry R. Spickermon, Muncie, has been cited by the state medical board to appear at the meeting, August 28, it is reported, to show cause why his license should not be revoked. Dr. Spickermon was recently convicted of violating the Harrison Narcotic Law (The Journal, July 11, 1925, p. 121).

School Buildings Condemned.—At a regular meeting of the state board of health, Indianapolis, July 8, seven public school buildings in Wells County and six others located in Pike, Madison, Martin and Sullivan counties were condemned on account of insanitary conditions, and their use for school purposes will be prohibited until these conditions have been improved.

Health Building Presented to Evansville.—Mr. and Mrs. Joseph B. Graham, Evansville, have announced, it is reported, the gift of a building to be known as the Graham Health Center, to be used for the Babies Milk Fund Association and as a community center. Mr. and Mrs. Graham will move to Detroit, and the gift is an expression of their regard for their old home city.

Indianapolis Sewage Plant.—The new Indianapolis sewage purification and disposal plant, which was recently put in operation, is, according to the *Bulletin of the Indiana State Board of Health*, the largest of its kind in the world, costing with the necessary sewer construction about $3,000,000. Dr. Karl Imhoff of Essen, Germany, sanitary engineer, was present at the opening of the plant.

Making Immigrants Chiropractors.—The *Journal of the Indiana State Medical Association* says that it has been announced in the newspapers that the Ross School of Chiropractic, Fort Wayne, has been designated officially by the U. S. Department of Labor as an immigrant school and that foreigners coming to the United States to study will be allowed to land without regard to the immigration quota when they are to be enrolled in that school.

Trachoma in Indiana.—The Indiana State Board of Health has made an investigation of trachoma in that state covering a period of more than two years, including all the state juvenile institutions, most of the orphan homes in every part of the state, an examination of the eyes of hundreds of school children in various parts of the state and an investigation of all reported outbreaks of trachoma. The surveys and examinations in every case have been made by experts from the U. S. Public Health Service. Not a case of trachoma was found in the state institutions, only one undoubted case and two possible cases in the orphan homes and no undoubted cases in the investigation of reports of outbreaks of the disease. The state board of health is therefore prepared to say that trachoma is not prevalent in the schools of Indiana nor among the general population.

Who Pays the Bills at Riley Hospital?—The *Indianapolis Medical Journal* says that certain counties in the state do not seem to understand who pays the bills at the Riley Memorial Hospital. The hospital is not in a general sense a free hospital, although large bequests have been made. It receives compensation for patients treated. The law provides that the judge of any circuit, criminal or juvenile court may commit to the hospital any child under 16 years of age having a legal settlement in the county when a petition for commitment is filed and the parent is not able to defer the expense of treatment. Any citizen may file a petition. A hearing is required, and if there is a question as to the probable benefit of treatment, he may order an examination by physicians. If the child is found a proper subject for treatment, the clerk of the court makes the application, and the cost of care and treatment shall be paid by the county in which the child has a legal settlement. No compensation is to be allowed to the physician for treating the patient other than that paid him by Indiana University.

IOWA

Effect of Potassium Iodid on Swine.—The Iowa Agricultural Experiment Station at Ames has been feeding potassium iodid in the ration to young growing pigs for the last three years and has compiled a bulletin showing the result of this work and containing maps that give the relative distribution of simple goiter in man in the United States, the prevalence of exophthalmic goiter, and the iodid content of drinking water in the various sections of the country. A copy of the bulletin, which is known as Research No. 86, may be obtained by addressing the Bulletin Section, Ames. It appears that the swine increased their rate of growth about 10 per cent. as measured by weight and increased the dimensional growth in height, length and leg circumference as a result of the feeding experiment.

Society News.—The Twin Lakes District Medical Society held a diagnostic clinic, July 16, at North Twin Lake, Rockwell City, at which about 175 physicians who were in attendance voted to repeat the clinic next year. Dr. Benjamin C. Hamilton, Jefferson, was made president-elect, and Dr. Paul W. Van Metre, Rockwell City, secretary-treasurer. Among the speakers were Dr. Harold Gifford, professor emeritus of ophthalmology, University of Nebraska College of Medicine, Omaha; Dr. Samuel T. Orton, professor of psychopathic diseases, State University of Iowa College of Medicine, Iowa City; Dr. Charles S. McVicar, Mayo Clinic, Rochester, Minn.; Dr. Jennings C. Litzenberg, professor of obstetrics and gynecology, University of Minnesota Medical School, Minneapolis; Dr. Edward A. Oliver, associate professor of dermatology, Rush Medical College, Chicago, and Dr. Merrill M. Myers, president of the Iowa Heart Society.

KANSAS

Personal.—Dr. Robert M. Isenberger has been appointed associate professor in the department of physiology and pharmacology at the University of Kansas School of Medicine.——Dr. Frank C. Neff was recently elected president of the American Association of Teachers of Children's Diseases.

Chiropractor Guilty of Bank Robbery.—Morrill E. Gebhardt, Wichita, pleaded guilty, July 11, to robbing the Cheney State Bank, it is reported, and was sentenced by Judge Sargent of the district court to serve from ten to twenty-one years, at hard labor, in the penitentiary at Lansing. Gebhardt is said to have confessed previously to robbing other Kansas banks.

LOUISIANA

Ban on Whisky.—The Rapides Parish police jury defeated the ordinance, July 13, by a vote of ten to one, which would have repealed the ordinance adopted recently prohibiting physicians of the parish from issuing liquor prescriptions. A committee of the local medical society appeared before the jury and urged that body to repeal the ordinance.

Centelever Escapes from Carville.—Willard Centelever, a patient at the government leprosarium at Carville, has escaped again, it is reported. Centelever escaped from the hospital last year and appeared several days later in a hotel in Washington, D. C. The officer in charge of the hospital stated, it is reported, that the escape carries with it no menace to persons with whom Centelever may come in contact.

Addresses on Mental Health.—Dr. George K. Pratt of the National Committee of Mental Hygiene gave a series of addresses last week in New Orleans on the importance of cultivating mental health in children and young people. Dr. Pratt spoke to the students of Loyola and Tulane universities at a public meeting in Gibson Hall, Friday night, and was entertained at luncheon at the Orleans Club by the Louisiana State Mental Hygiene Society.

Personal.—Dr. Stanley H. Osborn, state health officer of Connecticut, and Dr. Samuel R. McKelvey, Denver, who are touring the states for the International Health Board, spent July 14 in New Orleans. Dr. Osborn, with Dr. Oscar Dowling, state health officer of Louisiana, attended a mass meeting in Thibodaux, the purpose of which was to request the levee boards of adjoining districts to devise means to put fresh water from the Mississippi River into Bayou Lafourche.——At a recent meeting of the board of administrators of Tulane University, Dr. Frederick W. Parham was elected a member to succeed Dr. John Callan, former president of the city board of health of New Orleans, who died about a year ago.——Dr. Francis Michael Smith, Franklinton, director of the Washington Parish Health Unit, has accepted a position in Arkansas, where he will take charge of health work of a county and city.

MASSACHUSETTS

Personal.—It is reported that Dr. Raphael Isaacs, an instructor in medicine, Harvard University Medical School, Boston, has won the Alvarenga Prize of the College of Physicians of Philadelphia, which is given annually for the best essay on a medical subject. Dr. Isaac's subject was "The Nature of the Action of Roentgen Rays on Living Tissue."

Hospital News.—Plans are being prepared for an addition costing $400,000 to the Wesson Maternity Hospital, Springfield.——Construction and alterations costing $300,000 have been started at the old Sturdy Memorial Hospital, Attleboro.——Lynn Hospital, Lynn, has awarded a contract for a new $300,000 addition.——The Boston Floating Hospital opened its thirty-second season, June 30, and established a new departure in accepting certain selected orthopedic cases for intensive heliotherapy.

Tercentenary Celebration.—The Plymouth District Medical Society, Plymouth, recently held a tercentenary celebration in memory of Dr. Samuel Fuller, who came over in the *Mayflower* and was a practicing physician among the Pilgrims. The society met at the Jordan Hospital for clinical demonstrations and to hear an address by Dr. Thomas H. McCarthy, Brockton, on "The Educational Value of the Medical Society." They, in company with their families, then motored to the Mayflower Inn, where a banquet was served. Dr. Francis D. Donoghue, Boston, gave an address on "Pioneer Medical Practitioners of the Old Colony." Dr. James S. Stone, president of the Massachusetts Medical Society, also addressed the meeting.

MICHIGAN

Frederick K. Stearns Memorial Fellowship.—The fellowship in medicine established at the University of Michigan by Frederick Stearns & Company, Detroit, in honor of the late Frederick Kimball Stearns, will be devoted during the coming year to researches on insulin and insulin therapy.

Society News.—Lapeer County Medical Society held its annual picnic at Dryden, July 9, the guests of honor being Dr. Harley A. Haynes, director of the University Hospital, Dr. Max M. Peet and Dr. James D. Bruce, director of internal medicine at the state university, whose subjects were, "The New Hospital," "Brain Injuries," and "Diseases of the Thyroid," respectively.

Infant Mortality Decrease.—Twenty-one of the twenty-eight cities in Michigan with a population of 10,000 or more showed a decrease in the infant mortality rate in 1924, and in the state as a whole the mortality decreased from 80.4 per thousand births in 1923 to 72.2 in 1924, the latter rate being the rate for the entire birth registration area of the United States. Among the cities for Michigan noted by the Health News Service of the state department of health, the lowest infant mortality rate for 1924 was in Adrian (43) and the highest in Monroe (144).

MINNESOTA

Dr. Guyer Secretary of Tuberculosis Division.—Dr. Leo G. Guyer, Nopening, recently medical director of the Nopening Sanatorium, has been appointed executive secretary of the tuberculosis division of the department of public building, state board of control, to succeed Dr. Robinson Bosworth, who resigned to take charge of the Municipal Tuberculosis Sanatorium at Rockford, Ill.

MISSOURI

A Million for Washington University. — It has been announced that Charles Rebstock has given $1,000,000 to Washington University, St. Louis.

Medical Fraternity House.—The Alumni Association of the Alpha Kappa Kappa Fraternity of the St. Louis University Medical School has purchased a fifteen-room house at

3843 West Pine Boulevard, St. Louis, which will be remodeled for permanent quarters for the local chapter of the fraternity.

Laboratory Service at University Discontinued.—It has been found necessary on account of the shortage of funds for the maintenance of the state university during the current biennial period to discontinue the public health laboratory service, effective July 1. The state board of health maintains a laboratory at Jefferson City, to which material formerly sent to the public health laboratory should be forwarded for examination and report.

Court Orders Licenses Restored.—Circuit Judge Miller issued an order for the state board of health, July 15, to restore the licenses of Drs. Anne Golstein and Thomas R. Moore, which were revoked by the board following hearings at St. Louis last spring. The physicians contended, it is reported, that the charges of falsifying educational credentials were not sustained, that incompetent testimony was introduced against them, and that competent evidence in their favor was not admitted.

Educational Campaign.—The first of a series of meetings to educate the public in matters of hygiene and the prevention of disease was held at Rolla, July 24, under the auspices of the Missouri State Medical Association and the state board of health. Among those listed to speak were Governor Baker; Dr. Emmett B. North, St. Louis, president of the state medical association and also of the state board of health; U. S. Senator George S. Williams, St. Louis; Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, and Dr. James Stewart, state health commissioner.

Kansas City Requires Examination of Food Handlers.—A recently passed ordinance in Kansas City requires that every person who handles foodstuffs intended for public consumption undergo a physical examination every ninety days. The examination must be made by registered physicians in good standing and a report of the examination filed with the health department. Dr. Herman E. Pearse, city health director, has requested all physicians of the city to register with the health department in order to obtain an accurate list of reputable practitioners and a record of their professional status.

NEW YORK

Visiting Sanitarians.—During June the following sanitarians visited the New York State Department of Health to study the work: Dr. Phra Boriraksh, Siam; Dr. Amalia Simec, Jugoslavia; Dr. Howard C. Stewart, state department of health, Nashville, Tenn.; Dr. N. Koitcheff and Dr. R. Radkoff, both of Bulgaria.

Inspection of Summer Camps.—The division of sanitation of the state department of health, July 1, began an inspection of organized summer camps for the 1925 season, and an endeavor will be made to inspect camps that were not investigated during the 1924 season. Advice will be given camp authorities on water supply, sewage, garbage and refuse disposal and general problems in camp sanitation. The state commissioner of health has also notified health officers to make regular inspections of the so-called "hot dog stands" and other wayside eating establishments, and has called the attention of the town and village boards of health to the need of regulations for these places and appended an outline of points to be covered in making inspections.

Survey of Jail Prisoners.—According to a three year survey that has been completed by a joint committee representing twelve bodies interested in prison reform, 75 per cent. of the prisoners confined in the county jails and penitentiaries of New York state are suffering from mental and physical disabilities and disorders that are fundamental factors in their social failures and careers of crime. The report is based on a study of thirty-three penal institutions outside New York City. The committee proposes that county jails be replaced by farms, clinics and other institutions at which it will be possible properly to classify and to handle offenders, basing this classification on their needs rather than on the offenses of which they have been convicted.

Potts Memorial Hospital.—The cornerstone of the main building of the Potts Memorial Hospital at Livingston was laid, June 26, with appropriate ceremonies. The hospital will be for tuberculous patients who may recover, and they are to be given sheltered employment preparatory to reentering the normal channels of industry and professional work. Mrs. Ida C. Potts, who died in 1921, provided $150,000 in her will as a building fund for the institution. The idea of establishing a tuberculosis sanatorium for "sheltered employment" was suggested by the National Tuberculosis Association, and Dr. Harry A. Pattison, supervisor of medical service of that association, has been granted a leave of absence to serve as medical director of the hospital during its early period of development.

Resolution on Convalescent Care. — In view of the announcement of a gift by Mrs. Harriet M. Arnold of $1,000,000 and 200 acres of land at Greenwich, Conn., to St. Luke's Hospital, New York, to build and endow a home for convalescent patients, the following resolution, adopted at a conference of representatives of convalescent homes and social agencies, is of general interest:

Resolved, First, that this conference of representatives of convalescent homes and social agencies assembled at the Academy of Medicine, June 4, express its thanks for the constructive work done by the public health committee of the New York Academy of Medicine in formulating for the first time in the annals of medical history of this city standards of medical care and management of homes for convalescent patients, as these standards will prove of effective service to all of the institutions;

Secondly, that we endorse in general the principles in the report of the public health committee; and,

Thirdly, that we heartily approve the suggestion that the Hospital Information Bureau should operate the central reference office on convalescent problems in cooperation with the public health committee of the New York Academy of Medicine, the Hospital Social Service Association, the Sturgis Fund of the Burke Foundation, the Children's Welfare Federation and all other agencies interested in the work of promotion of proper convalescent care in this city, and express the readiness on the part of all those assembled to help in making the bureau an effective agent in the field of convalescent care.

New York City

Fund for Nurses' School.—Mrs. Stephen V. Harkness has given $250,000 to complete the $1,000,000 fund raised by the Presbyterian Hospital nurses for the new school of nursing at the Presbyterian-Columbia Medical Center. Mrs. Harkness' cash gifts to the institution now total $800,000.

Personal.—The degree of M.D. has been given to Dr. Alexander Bruno of New York by the University of Paris in recognition of his work in France while serving as associate director of the Rockefeller Commission on Tuberculosis in that country.——Dr. David E. Hoag, who was recently ordered to active duty for a period of intensive training as an officer in the Medical Reserve Corps at Fort Wright, Fisher's Island, N. Y., returned July 22.

Diphtheria Commission. — The Diphtheria Commission appointed by the city commissioner of health held its first meeting, June 18. Those present were Drs. William Ropes May, Harold R. Mixsell, Shirley W. Wynne, William H. Park and Louis I. Harris. Dr. Arthur W. Bingham was elected chairman, and Dr. Louis I. Harris, secretary, of the commission. A campaign will be organized to reduce the morbidity and mortality rate from diphtheria. Activities will be concentrated in the Bellevue-Yorkville district.

NORTH CAROLINA

Society News.—Dr. Stewart R. Roberts, professor of clinical medicine, Emory University, addressed the Mecklenburg County Medical Society recently on "The Size of the Heart and Its Relation to Disease."

Hospital News.—Dr. Furman Angel, Franklin, it is reported, has purchased the Dr. Wiley A. Rogers place and will conduct a hospital.——The directors of the Tuberculosis Sanatorium, at Sanatorium, have authorized the construction at once of a new nurses' home.

Physician Cited.—Dr. Edwin H. Bowling, Durham, was summoned to appear before the state board of medical examiners, Wilmington, July 22, to show cause why his license should not be revoked. Dr. Bowling was recently charged in federal court, it is reported, with violation of the Harrison Narcotic Law.

NORTH DAKOTA

Joint District Society Meeting.—The Devils Lake District Medical Society and the Northwestern North Dakota Medical Society held a joint meeting, July 22, at the State Tuberculosis Sanatorium at Dunseith. Following the scientific program a dinner was served at the hospital, then a number of the physicians with their families drove to Ninette, Manitoba, to attend a meeting of the Brandon and Southwestern Manitoba Medical Association, July 23, at the Manitoba Tuberculosis Sanatorium, where the program was conducted under the management of Dr. David A. Stewart, superintendent of the sanatorium. There were talks on heliotherapy, bone and joint tuberculosis, treatment of pulmonary tuberculosis, septic conditions of the chest often confused with tuberculosis, and tuberculosis in family groups. Dinner and supper were served by the sanatorium to about 100 guests.

OHIO

Superintendent Appointed.—Dr. Karl H. Van Norman has resigned as superintendent of the Charles T. Miller Hospital, St. Paul, Minn., to become superintendent of the Western Reserve University Hospital group at Cleveland.

New Chief of Industrial Hygiene.—*Ohio Health News* reports that Dr. Daniel J. Kindel, Cincinnati, has accepted the appointment as chief of the division of industrial hygiene in the state department of health, to succeed Dr. Nelson C. Dysart, now with the Columbus Health Department.

Deaths in Fifteen Years.—A compilation of the death certificates filed with the state department of health during the last fifteen years shows a total of 1,065,497, of which 573,470 were males and 492,027 females. More deaths occurred during March than in any other month, and the fewest occurred in June, then September, July and August, in order of decrease. There has been a steady increase in the number of deaths of persons over 95 years of age from 144 in 1910 to 207 in 1924, with the number of females predominating in each year. The age period, 70 to 74, claims more deaths than any other period except that of infancy (under 1 year of age). During the fifteen year period, 153,271 children died before their first birthday. This is 14.3 per cent. of all deaths. There has been a decrease in the infant death rate from 17.4 in 1910 to 12.5 per cent. in 1924. There has also been a decrease in the number of deaths of foreign born persons from 11,906 in 1910 to 11,111 in 1924.

PENNSYLVANIA

Chester Did Not Have Dengue.—The recent epidemic in Chester, which was reported to have been confirmed as dengue, was a milk-borne infection of the streptococcic type, and not dengue. The *Atlantic Medical Journal* says that there were about 400 cases in the outbreak and that the clinical picture was so strikingly like dengue in every way that it attracted the attention of the U. S. Public Health Service, which assigned Dr. Charles Armstrong to make an investigation. It was found that all the patients had been drinking raw milk from a certain dairy and that the proprietor and several others on the dairy farm were included among the victims of the epidemic. Cultures showed streptococci in the milk. While, from a "bedside point of view," the picture was that of dengue, it was shown that there were practically no mosquitoes at the time of the outbreak, that several members of one family would be affected while neighbors on either side, or sometimes in the same building, were exempt, and that the leukopenia which occurs in dengue was not present; there was in many cases a decided leukocytosis.

Legislative Activities.—The president of the Medical Society of the State of Pennsylvania, Dr. John Norman Henry, summarizes the work done by representatives of the society during the last legislative session. He says that the "one-board bill," which the last session of the state medical society had proposed having been defeated, the legislative program for the year was referred to the board of trustees, which agreed that no constructive legislation would be attempted by the society to regulate those desiring to practice, but that opposition would be made to bills proposed giving further license to osteopaths and licensing chiropractors and naturopaths. A few medical men appeared at hearings on these various cult bills, whereas hundreds of men and women of the chiropractic following particularly were there. However, the three cult bills were defeated. Dr. Henry concludes that the campaign showed that it is possible to convince members of the legislature that the aims of the medical profession are above and beyond commercial measure, and that if the physicians throughout the state will talk with their representatives in the legislature, they will meet a receptive attitude when a really constructive bill is brought up.

Philadelphia

Jewish Charity Fund.—The Federation of Jewish Charities will expend during the current year about $1,400,000, which will be dispensed to fifty charitable and philanthropic organizations.

Personal.—Dr. Chevalier Jackson has been honored by the French government with membership in the Legion of Honor. Dr. Jackson is now in France lecturing at the University of Paris on bronchoscopic work.

Teaching Hospital Dedicated.—The new wing of the Samaritan Hospital, which is the teaching hospital of Temple University, erected at a cost of $560,000, was dedicated, June 19, on which date the School of Medicine of Temple University held its annual Alumni Day celebration. The hospital now has a capacity of 305 beds.

Health in Small Plants.—Dr. William J. McConnell, Pittsburgh, has been appointed to develop a new industrial health plan for the Philadelphia Health Council, under which the protection of the health of employes in small plants will be possible. Dr. McConnell, who has been attached to the experimental research station of the United States Bureau of Mines at Pittsburgh, will assume his new duties, September 1, with the title of medical secretary of the Health Council. The new plan calls for the grouping together of the employes of the small establishments in the city into units of 1,000 each.

TENNESSEE

Personal.—Dr. Benjamin V. Howard, Knoxville, has been appointed a member of the state board of nurses' examiners. ——Dr. Beverly Douglas, Nashville, has been awarded the degree of doctor of science by the University of Lyons Faculty of Medicine, France, for work on the treatment of acute intoxication and infection.

Vanderbilt University School of Medicine.—The new buildings of Vanderbilt University School of Medicine are nearing completion and will be occupied at the opening of the next session, September 24. The reorganization of the school is the result of about five years' work and the expenditure of about $3,000,000 for new buildings. The faculty has been augmented by the addition of twenty or more professors, associate professors, assistant professors, lecturers, instructors and assistants. All of the former faculty, it is reported, will continue with the school. The main building houses both the hospital and the medical school under one roof. The hospital has a capacity of 185 beds and the entire plant is arranged to accommodate 200 students. A recent announcement contains the names of all the members of the faculty and the various faculty committees.

The names of those holding professorships follow: G. Canby Robinson, M.D., professor of medicine, dean; George H. Price, M.D., professor emeritus of diseases of the eye, ear, nose and throat; Barney Brooks, M.D., professor of surgery; Glenn E. Cullen, Ph.D., professor of biologic chemistry; Robert S. Cunningham, M.D., professor of anatomy; Walter E. Garrey, M.D., professor of physiology; Ernest W. Goodpasture, M.D., professor of pathology; Paul D. Lamson, M.D., professor of pharmacology; Waller S. Leathers, M.D., professor of preventive medicine; Duncan Eve, M.D., professor of clinical surgery; John A. Witherspoon, M.D., professor of clinical medicine; William H. Witt, M.D., professor of clinical medicine; John T. Altman, Sr., M.D., professor of clinical obstetrics; Richard A. Barr, M.D., professor of clinical surgery; Worcester A. Bryan, M.D., professor of clinical surgery; Owen H. Wilson, M.D., professor of clinical pediatrics; Sydney S. Crockett, M.D., professor of clinical neurology and psychiatry; Andrew N. Hollabaugh, M.D., professor of clinical obstetrics; James M. King, M.D., professor of clinical dermatology; William D. Haggard, M.D., professor of clinical surgery; Robert Caldwell, M.D., professor of clinical surgery; Perry Bromberg, M.D., professor of clinical urology; Marvin M. Cullom, M.D., professor of clinical ophthalmology and otolaryngology, and Henry E. Fraser, Captain, M. C., U. S. Army, professor of military science and tactics.

VIRGINIA

Personal.—Dr. Cora Z. Corpening has resigned from the staff of the Lake View Hospital, Suffolk, and gone to Virginia Beach to resume private practice.

Society News.—The Norfolk County Medical Society, has elected Dr. Stanley H. Graves president; Dr. Joshua Warren White, first vice president, and reelected Dr. Lockburn B. Scott, secretary-treasurer. These officers reside in Norfolk.

Shriners' Hospital at Richmond.—The Imperial Shrine Council which met at Los Angeles in June, selected Richmond as one of the cities for a hospital for crippled children. The initial structure will cost about $150,000 and it will be expanded by degrees. The site is to be selected by a committee to be appointed by the council.

WASHINGTON

Hospital News.—Dr. Dale O. Nugent has purchased the Centralia General Hospital for $40,000.——The Seattle General Hospital, Seattle, which recently purchased a city block as a site for a new building, is conducting a campaign for $500,000.

Society News.—Dr. John Earl Else, Portland, June 8, addressed the Whitman County Medical Society, Colfax, on "The Present Status of our Knowledge of Goiter."——Dr.

Frederick A. Slyfield, Seattle, recently addressed the Pierce County Medical Society on "Easy Methods of Diagnosis for the General Practitioner."

New State Director of Health.—Dr. Albert E. Stuht, Spokane, assumed the duties of director of the state department of health, July 1, succeeding Dr. Paul A. Turner, who resigned to become deputy commissioner of health of Seattle. Dr. Stuht was for six years county physician and county alth officer at Spokane, and formerly a member of the te board of health.

Personal.—Dr. F. J. Delaney, Port Townsend, has been appointed state health officer, to succeed the late Dr. J. C. House.——Dr. Edward L. Brinson has been reappointed county health officer of Whatcom County for a term of two years.——Dr. Frank H. Collins, Goldendale, has been appointed health officer for Klickitat County.——Dr. Erestus T. Hanley has been appointed commissioner of health of Seattle for the unexpired term of the late Dr. George N. McLoughlin.——Dr. John M. Henderson, Walla Walla, has resigned from the staff of the Veterans' Hospital of that city.——Dr. G. H. T. Sparling has been reappointed health commissioner of King County.——Dr. William D. Smith, Everett, has been elected president of the Providence Hospital staff.——Dr. Manch N. Garhart, Seattle, has been reelected president of the Seattle Rod and Gun Club.——Dr. Charles S. Bumgarner, Davenport, has been appointed county physician and health officer.

WISCONSIN

Society News.—Dr. Edward L. Miloslavich, director of the department and professor of pathology and bacteriology, Marquette University School of Medicine, Milwaukee, addressed the Austin-Flint Cedar Valley Medical Society, New Hampton, Iowa, July 8, on "Postmortems from the Standpoint of the General Practitioner."

Basic Science Board.—The Wisconsin Basic Science Board, created by the last legislature to examine all candidates for licensure in the basic sciences, anatomy, physiology, pathology and diagnosis, preliminary to their examination by the state board of medical examiners, consists of R. N. Bauer, professor of chemistry, Marquette University, Milwaukee, president; Prof. M. S. Guyer, department of zoology, University of Wisconsin, Madison, secretary and Prof. Frank G. Hall, department of biology, Ph.D., Milton College, Milton, treasurer (The Journal, June 27, p. 2011).

CANADA

Personal.—Dr. Herbert R. Corbett has resigned from the staff of the Nova Scotia Sanatorium, Kentville, and accepted a position on the staff of the Irene Byron Sanatorium, Fort Wayne, Ind.

Hospital News.—The new St. Mary's Hospital at Inverness, N. S., was recently dedicated.——The Montreal unit of the Shriners' Hospital was recently opened. It will accommodate fifty children and is intended for patients who can be relieved of deformities through surgical treatment. It is situated next to the Children's Memorial Hospital on Cedar Avenue, where about 100 children suffering from similar conditions are cared for.

Chiropractor Sells Morphin.—Hardy McNaughton, a chiropractor of Toronto, pleaded guilty, July 15, it is reported, to a charge of being in illegal possession of morphin, and was fined $200 and costs "or six months plus six months without the option of a fine," which period would be followed by two years of police supervision. A man having a marked bill in his pocket was sent to McNaughton's place to buy morphin. The bill was later recovered from the chiropractor's pocket while the messenger returned with the morphin.

GENERAL

National Conference on Pharmaceutical Research.—The fourth annual meeting of the National Council on Pharmaceutical Research will be held at Des Moines, Iowa, August 22. Following the reports of delegates from the fifteen affiliated organizations, there will be a general discussion on (*a*) census of research, (*b*) graduate students in pharmacy and their research work, and (*c*) research topics.

Directory of Health Officers.—The annual directory of city health officers in cities of the United States having 10,000 or more population, is published in *Public Health Reports*, July 3. Those who are full-time health officers are indicated [illegible] and a whole-time officer is defined as one who does not engage in the practice of medicine or any other business but devotes all his time to official duties.

Is Chlorinated Lime Dangerous?—In The Journal, April 26, 1924, a request was made for reports of cases of personal injury from chlorinated lime. At that time laws had been passed in several states requiring household packages of chlorinated lime to be labeled poison, and manufacturers and distributors were contending that poison labels were unnecessary, as accidents from the household use of chlorinated lime did not occur. No report of any such accident has been received. On the record as it now stands, therefore, the manufacturers and packers would seem to be amply justified in urging the repeal of the laws referred to. What are the facts? Reports of accidents, if there have been any, should be sent to the Bureau of Legal Medicine and Legislation, American Medical Association, 535 North Dearborn Street, Chicago, Ill.

Suicide Among Wage Earners.—Suicide is two and one-half times as frequent among men as among women in the wage earners of United States and Canada, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company. This ratio relates to all ages combined; but when the data are studied by age periods, the ratio of death of males to those of females varies greatly and the preponderance of suicide among males increases perceptibly with advancing age. One age period (15 to 19 years) stands out from all the rest as the only time of life in which suicide is more common among females, and in this period in 1923 there were nearly two and one-half times the number of suicides among the females insured in this company as among the males. These data relate to white wage earners only. Suicide is much less frequent among colored persons.

Biologic Assay Standards.—The Bureau of Chemistry, U. S. Department of Agriculture, is now prepared to supply standard substances that conform to the biologic assay requirements of the Tenth U. S. Pharmacopeia, and manufacturers are invited to apply, indicating the amount of material they desire against which to check their biologic assays. The new Pharmacopeia will state in the preface that biologic assays have now been made compulsory for a number of important drugs and preparations, and to facilitate the adoption of these standards and to provide a greater degree of uniformity in the application of these assays, the officials of the Bureau of Chemistry have indicated their willingness to supply substances conforming to the new standards. This service is the result of cooperation between the Committee of Revision, the manufacturers and the Bureau of Chemistry.

Society News.—At the annual meeting of the American Orthopedic Association, Washington, D. C., May 5-6, Dr. Michael Hoke, Atlanta, was elected president; Dr. James T. Watkins, San Francisco, president-elect; Dr. John Dunlop, Los Angeles, vice president; Dr. John L. Porter, Evanston, Ill., treasurer, and Dr. DeForest P. Willard, Philadelphia, secretary.——The annual meeting of the Medical Society of the Missouri Valley will be in St. Joseph, Mo., September 30-October 2, under the presidency of Dr. John W. Martin, Des Moines, Iowa. Diagnostic clinics will occupy the morning hours and a series of symposiums by various state universities the afternoons. The annual dinner will be at the Hotel Robidoux, Thursday evening, and a smoker will be held Wednesday evening, with the Buchanan County Medical Society and the St. Joseph Clinical Society acting as hosts. The secretary is Dr. Charles W. Fassett, 115 East Thirty-First Street, Kansas City, Mo.

Appointments of National Research Council Fellows.—The chairman of the medical fellowship board, National Research Council, Washington, D. C., reports the following appointments: Homer M. Smith, D.Sc., for the last two years a fellow in medicine of the council at Harvard University Medical School, Boston, has been appointed acting professor of physiology at the University of Virginia; Clifford S. Leonard, Ph.D., a fellow in medicine of the council since 1923 at Yale University, has been appointed instructor in pharmacology at Yale; Dr. Minnie Jane Sands, since 1923 a fellow in medicine of the council at the Royal Infirmary, Edinburgh, at Cambridge, England, and at Western Reserve University, Cleveland, has been appointed professor of physiology at the Women's Medical College, Philadelphia, and Dr. Louis N. Katz, for the last year a fellow in medicine of the National Research Council studying at the University of London, has been appointed senior instructor in physiology, Western Reserve University School of Medicine, Cleveland.

Health of Indians.—The first organized effort to improve the health of the American Indians was made in 1873, when a division of medicine and education was established in the Bureau of Indian Affairs. The health personnel of the U. S. Indian Service today comprises 203 physicians, 105 nurses, 292 hospital employees, sixty-nine field matrons, six field dentists, seven special physicians, one medical supervisor and one chief medical supervisor. The first hospital for Indians, according to the bureau of Indian affairs, was established at Carlisle, Pa., in 1882. There were eighty hospitals for Indians in 1924, thirty-four of which were agency hospitals, thirty-seven school hospitals, one asylum for the insane, seven sanatoriums and one sanatorium-school. The total capacity of these hospitals is 2,475. The first specific health appropriation for the Indians was made in 1911 and amounted to $40,000. The annual appropriation in the intervening years has gradually increased until in 1925 it was $500,000; there is expended in addition, for the health of Indians, tribal funds, Indian moneys and other appropriations when available and legally applicable.

Smallpox in India, Russia and the United States.—The American Association for Medical Progress notes that in 1923, the last year for which complete data are available, the United States was surpassed in the number of cases of smallpox only by India and Russia. Certain state laws which require that school children shall be vaccinated also exempt from vaccination those who have a certificate from some practicing physician stating that such person is not a fit subject for vaccination. There does not seem to be any rule as to what constitutes a cause for exemption. The experience of Detroit in 1924 throws light on this problem. There were over 800,000 vaccinations in a comparatively short period without any serious consequences. More than 3,000 at the Herman Keifer Hospital in that city were vaccinated without any untoward results, and among these were 425 who had diphtheria, 644 who had scarlet fever, 368 who had tuberculosis, 52 with measles, 30 with mumps, 90 with erysipelas, 104 with infantile paralysis, 35 with whooping cough and 21 with chickenpox. In addition, there were among them 773 mothers lying in and 676 infants.

Bequests and Donations.—The following bequests and donations have been announced recently:

The entire residuary estate of Dr. Nicholas R. Dann estimated now at about $50,000, will go, on the death of his widow and sister-in-law, to the New York Eye and Ear Infirmary.

St. Luke's Hospital, Woman's Hospital, Presbyterian Hospital and Long Island College Hospital, all of New York, $50,000 each under the will of the late Mrs. Marion Prentice Brookman.

The Nassau County Hospital, Farmingdale, N. Y., $2,000, and Mercy Hospital at Hempstead, $1,000, by the will of the late William F. Corwith of Hempstead.

The Harlem Eye, Ear and Throat Hospital, $1,000, by the will of the late Amelia Brady.

West Jersey Homeopathic Hospital, Camden, N. J., $100,000, and the Cooper Hospital, Camden, $50,000, by the will of the late William J. Cooper.

The New York Association for the Blind, $2,500, and the Polyclinic Hospital, New York, $1,500, by the will of the late Mrs. Martha G. Hervey.

The Walter Scott Free Industrial School for Crippled Children and the Lulu Thorley Lyons Home for Crippled and Delicate Children, Claverack, N. Y., $5,000, by the will of the late Mrs. James Merrihew.

The Melrose Hospital, Brattleboro, Vt., $1,000, by Ernst E. Plumb, Leyden, Mass.

The Central Maine General Hospital, Lewiston, $1,000, Children's Hospital, Portland, Me., $500; Maine Institution for the Blind, $500; Home for Aged Men, Portland, Me., $500, and one half of the residuary estate after various other bequests have been granted to the Central Maine General Hospital, by the will of the late Miss Eliza Jordan of New Gloucester, Mass.

The Anna Jaques Hospital, Newburyport, Mass., $500; the Homeopathic Hospital Association of Newburyport and the Newburyport Society for the Relief of Aged Men, each $500, and one third each of the residue after the payment of private bequests to the Anna Jaques Hospital and the Newburyport Hospital Association, by the will of the late Mrs. Clara A. Burley.

The Hackensack Hospital, Hackensack, N. J., $500 by the will of the late Otto H. Krause, a chemist of Mountain Lakes

By the will of Miss Sophie Moen, Boston, $50,000 to the Memorial Hospital, Worcester, and $5,000 to the Old Ladies' Home of Worcester.

The Southampton Hospital, Southampton, N. Y., a $30,000 contribution by Col. Henry H. Rogers, to assist in constructing an addition to the School of Nursing and for its physiotherapy equipment.

Davier Memorial Hospital, LaHarpe, Ill., was recently bequeathed $2,500 anonymously with the stipulation that $2,000 should be used to purchase a roentgen-ray machine.

The New York Postgraduate Medical School and Hospital, $1,000, under the will of the late Mrs. Ellen F. Billings.

The Presbyterian Hospital, New York, $10,000, to endow a bed by the will of the late Miss Elizabeth Auchincloss.

The Union Hospital Association, New York, $162,161 and $81,330 each, to the Beth David Hospital, New York, the Bronx Society for the Prevention of Cruelty to Children, the Salvation Army, the Association for Improving the Condition of the Poor, and the Home for Aged of the Little Sisters of the Poor, by the will of the late John J. McKenna.

By the will of the late Margaret Dunmore her estate of $11,100 will go to the Chestnut Hill Hospital, Philadelphia, following the death of her husband and the death of A. M. Callahan, to whom the estate has been left in trust.

The Decatur County Memorial Hospital, Greensburg, Ind., $2,000, through the will of the late Louisa D. McLaughlin, Greensburg.

The Spencer Hospital Association, Spencer, Iowa, $5,000, by the will of the late Mrs. Charles E. Leach.

FOREIGN

Broadcasting Health Lectures.—The medical officer of Plymouth has just finished a series of talks on health broadcast by the British Broadcasting Company, which the *Medical Officer* considers the first occasion that a medical officer of health of a large town has given a series of radio talks. The subjects were "Health and Wealth," "The Care of Children," "Tuberculosis," "Flies," "Milk" and "Teeth."

Prize Essays on Maternal Mortality.—The Melbourne Permanent Committee for Postgraduate Work, which a year ago announced a prize of 150 guineas for the best essay on "The Causes and Prevention of Maternal Morbidity and Mortality," has received twenty-three essays which have been referred to the judges, and the announcement of the award is expected to be made in August. The University of Melbourne recently was given £10,000 by the trustees of the Edward Wilson Fund to endow research in the science of obstetrics, and a committee has been appointed to deal with the subject.

"Crisis in Medical Education in Bengal."—Under this head the *Indian Medical Gazette* notes that the General Council of Medical Registration and Education of the United Kingdom has withdrawn its recognition of the medical degrees of the Calcutta University because of refusal of the university to permit the inspector of medical education to inspect the final examinations. The position of the council seems to be that it has to satisfy itself as to the standards of the degrees which it recognizes, and if it is not permitted to make inspections the withdrawal of recognition naturally follows. The university, it is said, takes the position that the recognition of the degrees is a matter of reciprocity and does not mean inspection either of the colleges or of the examinations held by the university.

Personal.—Prof. R. W. Reid, who had held the chair of anatomy at the University of Aberdeen, Scotland, since 1899, has tendered his resignation.——Professor Giordini read a paper on "Production of Oxygen" at the ceremonies attending the laying of the corner stone of the chemistry institute at Bucharest during the recent international chemistry conference there.——The Spanish Achúcarro prize for distinguished work in the histology of the nervous system has been awarded this year to Prof. K. Schaffer, chief of the Budapest Institute for Research on the brain. This prize is awarded every two years alternately to a Spanish and a foreign histologist.——Sir John Bland-Sutton, president of the Royal College of Surgeons of England, was made a baronet on the king's birthday, and Dr. J. Robertson, professor of public health, University of Birmingham, England, was made a knight.——Sir John MacAlister, secretary of the Royal Society of Medicine since 1887, has resigned from that office on account of ill health.

Deaths in Other Countries

Dr. Adolf Vossius, emeritus professor of ophthalmology, Giessen, aged 71.——Dr. J. Eröss, professor of pediatrics at Budapest.——Dr. W. Patzschke, privatdozent for syphilitic affections of the mouth, Hamburg, aged 33.——Dr. Max Stumpf, former director of the midwives' school at Munich, aged 74.——Dr. E. J. McWeeney, professor of pathology and bacteriology, University College, Dublin, aged 61.——Dr. Henry Corby, professor of obstetrics and gynecology, University College, Cork, aged 77.——Dr. Eric Sinclair, Sydney, Australia, formerly inspector general of mental hospitals and president of the section of neurology and psychiatry at the Australasian Medical Congress, 1908, May 15, aged 65.

CORRECTION

Titles Omitted.—The following titles were omitted from the list of contents of the *American Journal of Physiology*, May, 1925, published in THE JOURNAL, July 11, p. 142: Blood Regeneration in Severe Anemia. II. Favorable Influence of Liver, Heart and Skeletal Muscle in Diet. F. S. Robscheit-Robbins and G. H. Whipple, Rochester, N. Y., p. 408; Blood Regeneration in Severe Anemia. III. Iron Reaction—Favorable—Arsenic and Germanium Dioxid Almost Inert. G. H. Whipple and F. S. Robscheit-Robbins, Rochester, N. Y., p. 419.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 17, 1925.

International Radiological Congress

The first International Radiological Congress, which was attended by about 350 delegates from all civilized countries, has been held in London and was in every way a great success. About two thirds of the members were physicians and the remaining third physicists. The Duke of Connaught and the minister of health welcomed the foreign delegates. The work of the congress was carried out in three sections, physics, electrotherapy and actinotherapy.

INTERNATIONAL UNITS AND STANDARDS FOR ROENTGEN-RAY WORK

Sir William Bragg, F.R.S., said that roentgen-ray standards are beset with difficulties because of the difference between quantity and quality, the difference between the amount of energy and the wave length that carried it, the scattering of rays and the consequent formation of new beams. Various countries had been working at the last problem and he was a member of a standing committee appointed by the roentgen-ray and physical societies to study the question. A standard must be largely a matter of compromise, and three grades could be set out: (1) determination of a scientific unit; (2) a standard apparatus for making comparisons, and (3) comparison of the results of treatment, entirely a hospital matter.

CANCER OF THE BREAST

Professor Wintz (Erlangen) said that the value of roentgen rays in cancer of the breast was still much disputed. He divided cases into three groups in which: (1) the tumor was restricted to the breast, movable and the glands were not involved; (2) the surrounding region was already infiltrated and the axillary glands were palpable; (3) the supraclavicular glands were palpable. Three years after treatment he obtained a percentage of clinical cures in Groups 1 and 2 combined of 77 per cent.; four years after, of 65.9 per cent.; five years after, of 48.5 per cent.; six years after, of 32.1 per cent., and seven years after, of 20 per cent.

THE ENCIRCLEMENT RADIUM TREATMENT

Mr. Sampson Handley described his encirclement method of radium treatment. Every aggregation of cancer cells had a definite life cycle, and after increasing in size for a varying period and at a varying rate tended spontaneously to undergo fibrotic changes. The center of a mass already degenerating or dying would succumb to a much smaller dose of radiation than the actively growing periphery. Attention might almost be confined to the periphery. The disappearance of a lump of malignant tissue was of less importance than the arrest of its spread. In addition to spread by infiltration, cancer cells spread by permeation of the lymphatics—a process that outstripped infiltration. Often it was best to ignore for the time the visible deposits and direct attention entirely to the zone of infiltration and of permeation surrounding it. The radium tubes should be so arranged as to give a lethal dose to that zone. Afterward, if the nodule had not disappeared, a second irradiation might be given in a narrower circle, and later still, if a vestige remained, another irradiation on the nodule itself.

PROTECTION OF WORKERS

Dr. G. W. C. Kaye of the National Physical Laboratory, London, said that radiologists did not always appreciate the result of scattered radiation. Rays were given off from the body of a person subjected to roentgen rays, and the scattering produced by the air in the room in the vicinity of the tube was something like that of the primary radiation beam. If the scattering was excessive, the operator should be behind a screen or wall, and this scattering rendered inadvisable the use of the cubicle system. Each outfit should be protected by walls extending from floor to ceiling, the floor and ceiling being also protected. The target of the tubes should not be pointed toward the controls. The protecting lead for a strength not exceeding 70,000 volts should be at least 1.5 mm. thick, for 100,000 volts 2 mm. thick, and for anything beyond, 3 mm. Whenever possible, the bulb should be surrounded by protective material, and if the latter was lead, it must be adequate for the prevention of sparking. He was surprised that the open bulb was still used, as in many cases it afforded no protection. Ventilation of enclosed spaces used in roentgen-ray work was important; failing it, workers suffered from depression, headache and nausea. Ceilings should be not less than 11 feet high and the conductors at least 9 feet from the floor.

The Cause of Cancer

A discovery of the first importance as to the causation of cancer appears to have been made by Dr. W. E. Gye in the laboratories of the Medical Research Council and is reported in the *Lancet*. It has the great merit of reconciling the conflicting evidence as to a parasitic cause. By carefully controlled experiments with the Rous chicken sarcoma, Dr. Gye has established the following: All malignant new growths contain an ultramicroscopic virus or group of viruses that can be cultivated. This applies to the carcinomas and sarcomas of fowl, mice, rats, dogs and man. The virus resides probably within the cells of the neoplasms. The virus alone, washed free from all adherent material, does not produce a tumor when injected, and does not even produce a visible lesion. But when injected with virus-free extracts of tumors, the virus produces a malignant new growth. The extracts contain, therefore, a substance called by Dr. Gye the specific factor, which enables the virus to attack the cells of the injected animal so as to transform them into cancer cells. There is no species specificity so far as the virus is concerned, for tumors can be obtained in one species of animal with the virus obtained from the tumor of another species. The specific factor shows a strict specificity of species. Thus, in order to produce a malignant new growth in a mouse it is necessary to use the specific factor from a mouse tumor, while the specific factor of a chicken tumor is ineffective. There is probably also a strict specificity of tissue for the specific factor. So far only sarcomas have been obtained, and these only with a mixture of virus and the specific factor from sarcomas, not from carcinomas. Thanks to the help of Mr. J. E. Barnard, F.R.S., whose brilliant advances in the use of ultraviolet and roentgen rays in microscopic work are well known, the virus, which is so minute as to be visible only by dark-ground illumination and resembles that of bovine pleuropneumonia, has been photographed.

The Spahlinger Treatment

Though the ministry of health adopts an attitude of reserve and the authorities on tuberculosis in this country remain unconvinced, the attempts of laymen, aided by a few physicians, to boom the Spahlinger treatment continue. The latest is explanatory addresses to a meeting of Cheshire landowners and farmers at Crewe. Extraordinary claims were advanced by Mr. R. G. Lovell, who has been several years associated with Mr. Spahlinger in the work at Carouge, Geneva, and by two medical members of Parliament who had made recent personal investigation of the treatment and its results on the spot. It appears that the present claims made for the treatment depend on the history of twenty cows immunized some years ago by a vaccine, and on the cures and relief that are stated to have been afforded in the case of many human patients. Recently a deputation of physicians who are members of the House of Commons visited Geneva, and two of them—Dr. T. Watts, M.P., and Mr. J. H. Williams, M.P.—said that they had been convinced. Mr. Lovell said that Mr. Spahlinger had declined a German offer of a quarter of a million sterling, with half profits, for the exclusive use of his formula. Progress was hindered by the war and was now held up by financial difficulties, but be believed in the treatment and regarded Mr. Spahlinger as a genius and a great benefactor, although some people thought him a crank. Dr. J. Watts, M.P., who was in Geneva making the latest of several visits, said he had come back absolutely convinced that in Spahlinger's work they had something very different from any other pretended cure. It was a serum treatment differing fundamentally from others in that, from the first isolation of the tubercle bacillus, Henry Spahlinger had recognized the probability, and afterward proved the existence, of at least twenty-two strains of the bacillus, produced by as many different environments. His serums were prepared, accordingly, to counteract the twenty-two different microbic poisons with as many antidotes. The vaccine was usually obtained from black horses of the Irish hunter type. The twenty-two antigens produced by twenty years of labor by Spahlinger were combined to form his complete serum. The tragedy today was that Spahlinger was in possession of only seven of these antigens, but even with that partial serum marvelous results were being obtained. It is curious that at none of these meetings held in support of the Spahlinger treatment is any explanation forthcoming as to why no one in its native country seems inclined to give it any financial support. Switzerland is by no means backward in science or wanting in resources. Why are the appeals always made to England to save this supposed boon to humanity?

The Sterilization of the Unfit

In recent years, the subject of the sterilization of those who are mentally defective has attracted a good deal of attention. The result is that physicians are often consulted by the parents or guardians of defective children with a view to sterilization. As physicians are seriously exercised as to the legal position, the British Medical Association has obtained the opinion of a lawyer, Sir Travers Humphreys. He holds that any physician who performs vasectomy on the male or salpingectomy on the female, on eugenic grounds, would be acting illegally, even though the consent of both parents was obtained. The operation of sterilization is legally an assault. The only legal justification for performing it on a person who from mental weakness is incapable of giving a reasoned consent would be that the operation was necessary on grounds of health. The legal risks involved in such an operation would attach to all persons concerned —the physician who performed it and the parents who gave consent. The physician would have to answer to a criminal indictment for unlawfully wounding. A civil action for damages could also be brought by the defective or by his next friend in the same manner as actions are now brought by infants, and damages might be recovered from the physician. It is true that the jury might be disposed to take the view that in the public interest the conduct of the defendant was excusable and mitigate the damages, but it must not be forgotten that the operation would have deprived the defective of a function which the law nowhere denies him. On the contrary, the elaborate provisions of the mental deficiency act for the safeguarding of defectives might be invoked as indicating that the only means sanctioned by law for obtaining the desired end—preventing the propagation of the unfit—consists in segregation in licensed institutions. The same considerations would apply to epileptic patients of tender age. In the case of epileptic patients of mature years, the matter would depend on whether the person was able to and did give his consent to the operation. In the case of an epileptic patient who was quite normal and had full reasoning power between the attacks, his consent would afford an answer to any proceedings, civil or criminal, but great care should be taken in obtaining the clearest evidence of such consent before operating. In the absence of such consent, the operation would be illegal.

The Virus of Epidemic Encephalitis

The chief difficulty that has attended the study of epidemic encephalitis is the transmission of the disease to experimental animals. It has been suggested that the virus to be obtained from ordinary herpes of the skin is similar to that causing epidemic encephalitis, and rabbits are especially liable to encephalitis induced by injections of herpetic poison. The link between this "herpetic encephalitis" and true epidemic encephalitis has been wanting or feeble. Fresh light is thrown on the matter by a paper on "The Virus of Encephalitis Lethargica" by J. R. Perdrau (from the Laboratory of the Lambeth Hospital), which is published in the current number of the *British Journal of Experimental Pathology*. He has discovered that brain matter from fatal cases of epidemic encephalitis, if preserved in glycerin in the icechest, becomes much more virulent. After a lapse of six weeks, rabbits that could not formerly be infected with the brain matter quickly succumbed to it, and showed signs of an encephalitis indistinguishable from that of herpes. It would seem to follow that fresh brain matter from a fatal case contains, in addition to the virus of the disease, a relatively large quantity of antibody to this poison. The antibody, however, is less stable than the virus and so disappears. Thus, the brain matter becomes progressively more virulent up to a point of time. If this work is confirmed, it will enable a fresh attack to be made on the disease.

JAPAN

(From Our Regular Correspondent)

June 28, 1925.

Abolishment of Board of Beriberi Investigation

The retrenchment in government expenses necessitated that the board of beriberi investigation should be abolished. The eighteenth conference, recently held in the council chamber of the war department, was the last. The committee had done its best but was not fortunate enough to find the true cause of the disease. Nevertheless, its investigation furnished a valuable contribution to pathology. The opinion of the majority of the committee holds that beriberi is due to lack of vitamin B in conjunction with some other factor.

Research on Gastric Ulcer

Dr. I. Honda of the pathologic laboratory of the Kyoto-Furitsu Medical College, for his studies of gastric ulcer, may receive a special award at the Japan pathologic conference, which is to be held, July 11, at the Imperial University in Hokkaido.

Kyoto University Fire

A great loss was suffered by the Kyoto Imperial University, May 1, when the pathologic laboratory and its library were destroyed by fire. Most of the valuable specimens and papers were lost. The damage to the buildings alone is estimated at 100,000 yen, and the amount of damage to the apparatus and specimens is now being investigated.

Keio Medical Leader Retains Place

Baron Kitazato, who tendered his resignation as the head of the medical department of the Keio University, was persuaded to remain in his position by the urgent request of 700 students.

Honorary Degree Conferred on Oral Surgeon.

Dr. M. Chiwaki, president of the Tokyo Dental College, was presented with a certificate by the American ambassador, Mr. Edgar A. Bancroft, conferring on Japan's "father of modern dentistry" the honorary degree of Doctor of Laws granted by the Loyola University of Chicago.

PARIS

(From Our Regular Correspondent)

July 16, 1925.

Antigen Treatment of Tuberculosis

Before the Société des médecins de sanatoriums et de dispensaires d'hygiène sociale, L. Guinard has recounted his attempts to treat pulmonary tuberculosis with the antigen of Nègre and Boquet. The therapeutic trials were carried out at the Bligny Sanatorium, of which Guinard is the medical director.

The antigen, procured by Nègre and Boquet from the laboratory of Professor Calmette, is an alcoholic extract of bacillary bodies first treated with acetone and then dried and sterilized. Equal parts of distilled water are added, and the alcohol is eliminated by distillation in vacuo. A cubic centimeter of the injectable product corresponds to a centigram of bacillary bodies.

Through numerous experiments with rabbits and guinea-pigs, Nègre and Boquet have demonstrated that their bacillary extract has antigenic properties in that in vitro it fixes the complement of the serum of tuberculous subjects and that it produces antibodies in rabbits.

Injection of the antigen causes no local or general symptoms of hypersensibility in tuberculous animals. It also localizes and retards the progress of tuberculous lesions in laboratory animals, so that they outlive, to a notable degree, the controls. The lesions were much less extensive in the treated animals. The tubercle bacilli were much less numerous, being commonly confined to certain organs in which lesions in process of fibrosis were sometimes found. These results justified therapeutic trials on man.

The first trials on human beings were carried out by Armand Delille, Duhamel and Marty, who treated fifteen tuberculous children, and observed improvement in the general symptoms and local signs. They also observed, during the treatment, a certain parallelism between the antibody content of the blood serum and the general condition of patients.

Favorable action of the antigen in the treatment of tuberculosis of the skin and mucous membranes is reported by Lortat, Jacob and Bethoux, Halbron and Isaac Georges. These authors regard treatment with the antigen as a useful adjuvant of established methods of treatment of tuberculosis of the skin and mucous membranes.

Since 1923, Dr. Guinard has treated, at the Bligny Sanatorium, 142 patients with pulmonary tuberculosis. Of these patients, 116 presented tubercle bacilli in the sputum; forty-seven are still under treatment. Three of the patients presented pulmonary tuberculosis with complications (lupus of the nasal mucosa and of the gums). After several trials, Dr. Guinard, noting how well the antigen was borne, employed the product in an undiluted form or diluted with an equivalent volume of serum. He began with a dose of 0.05 c.c., which was increased gradually until a dosage of 1 c.c. a day was reached. Reactions were not infrequent. Contrary to the practice of his predecessors, he introduces no interval without treatment during the course of the injections, which are repeated every day or every other day during from five to six months. Some patients have been given the antigen continuously for nine, ten, eleven and even fourteen months. While the antigen is remarkably well borne, its injection causes a transient pain. Local reactions may be produced by the first injections, but usually are mild, and subside within forty-eight hours. In from 12 to 15 per cent. of the patients, the local reactions may be more intense and may persist for a time. At the start, rather large doses (from 0.25 to 0.5 c.c.) cause slight transient elevations of temperature. Changes of temperature are especially frequent in febrile and in subfebrile subjects. In such cases, small doses should be given at the start, and the progression both as to the increase and the repetition of the doses should be slower. The antigen is not advised as a radical curative remedy but only as a therapeutic adjuvant, useful in stimulating the natural defenses of the organism against tuberculosis, and reported to be safer than tuberculin. Of the 142 patients treated by Dr. Guinard, only fifty-five have finished the course. These included:

1. Ordinary fibrocaseous tuberculosis, with tubercle bacilli in the sputum (unilateral, eighteen cases; bilateral, ten cases).
2. Localized pulmonary tuberculosis with cavitation, with tubercle bacilli in the sputum—six cases.

The results in these thirty-four cases were as follows:

(*a*) Excellent results; adventitious symptoms have disappeared; no further tubercle bacilli in the sputum—eight cases.

(*b*) Condition much improved and the improvement stabilized: fourteen patients. In eleven of the fourteen the lesions show a marked tendency toward fibrosis.

(*c*) Amelioration or arrest—eight cases.

(*d*) Evolution not arrested but retarded—four cases.

3. Patients with extensive progressive bilateral lesions. The treatment had no effect in these cases.
4. The remaining patients, in whom the results of the treatment were excellent. These were affected with discrete lesions of slow evolution and were manifestly favorable cases. The good results might have been effected by the sanatorium treatment alone.

Fresh-Air Schools

Vacation colonies, which provide for poor children a sojourn of several weeks in the country, deserve the greatest praise and encouragement, but they are expensive, the outing is too short, and the child must be removed from the family. It would be better if these children could have fresh air all summer at slight expense, while left in the family environment. This the fresh-air classes established at Lyons, Versailles and Saint Brieuc have endeavored to accomplish.

Also Paris has created such fresh-air schools at slight expense by utilizing the open areas of the fortifications. Beginning in 1920, a number of trials have been made, and the results are more than satisfactory.

In the organ of the Comité national de défense contre la tuberculose, Dr. G. Vitry has given an account of the work accomplished by the fifteenth arrondissement of Paris, in which he has directed the fresh-air school for five years. This school, the expenses of which are paid out of the school fund of the fifteenth arrondissement, the funds of the departmental office of public health and the special appropriations of the department of primary instruction, is conceived on the type of a day school. The children are brought at 8 o'clock in the morning and leave at 6 o'clock in the evening. They take their midday meal and their afternoon luncheon at the school. They remove their street garments when they arrive and don a special school uniform. From two to three hours each day are reserved for regular class work, while the rest of the time is occupied with gymnastics, games, gardening and a nap after luncheon. The whole time, so far as the weather permits, is spent in the open air. Two tents are immediately available but are used only in case of rain or on chilly days.

Each child, before he is admitted to the school, is given a complete medical examination. He brings with him his record card as filled out by the medical inspector of the school he has been attending. In the fresh-air school the child will be for several months under the supervision of a physician. The examination of the lungs is especially thorough, and signs of tracheobronchial adenopathy are diligently searched for. For children affected with tuberculosis, life at the fresh-air school is fatiguing. They should be placed in a preventorium.

At present, the fresh-air school opens the first week in May and closes the last week in September. A longer term in our northern climate is scarcely feasible. When the children leave the school in the fall, they have usually improved wonderfully.

RIO DE JANEIRO

(From Our Regular Correspondent)

June 15, 1925.

Detection of Spirochaeta Pallida

Dr. A. Aleixo, a professor in the Bello Horizonete Medical School, has studied the detection of *Spirochaeta pallida* by puncture of the chancre. The area about the chancre is sterilized and local anesthesia is used. A needle is inserted almost parallel to the surface, so as to cover practically the whole diameter of the chancre. With a Luer syringe, fluid is aspirated slowly. The fluid obtained in this way from a chancre usually contains few cells but many spirochetes. Tribondeau-Fontana's method is used for staining smears. Dr. Aleixo has applied this procedure in fifty proved or suspected cases; of these, forty-three, or 91.4 per cent., proved positive. This group included five cases of healed chancre, one case of phimosis, with a hidden chancre, and four cases in which identification of the organism proved difficult. Large chancres do not always yield the greatest number of spirochetes. Among the forty-three positive cases there were nine large chancres, and in seven of these, the spirochetes were rather scarce. The serum in some cases showed thready formations with bipolar granules similar to the forms found by Noguchi, Meirowiski and Bruck. Aleixo thinks they may be transition forms of *Spirochaeta pallida*. This would explain the success of inoculations with material apparently free from spirochetes, as in the cases reported by Arzt and Ker. In cases of mixed chancre, scrapings do not show the spirochetes, but punctures revealed them in six cases. A puncture also showed spirilla associated with fusiform bacilli in two cases. In one of these, spirochetes were also found. This occurrence has led Aleixo to accept a new type of mixed chancre, which he calls Schaudinn-Vincent's mixed chancre. Dr. Aleixo found neo-arsphenamin the most rapidly effective, then bismuth and finally mercury, in causing the spirochetes to disappear from the chancre.

Removal of the Gasserian Ganglion

Prof. A. Brandão, Jr., has reported to the National Academy of Medicine three cases of physiologic removal of the gasserian ganglion. In the first case, the patient had suffered for three years from itching in the left side of the mouth and tongue, with constant fever and a sensation as of an electric shock in the left side of the face. Dr. Brandão performed a retrogasserian neurotomy, after the method of Frazier, but using Adson's guillotine and lighting device. The "electrical shock" sensation disappeared completely, as well as the itching, but a left facial paralysis ensued.

In the second patient there was, after the operation, anesthesia of the trifacial area, including the vault of the palate, with normal sensation in the soft palate, uvula and both pillars on the neurectomized side; retention of the sense of taste in the left half of the tongue, and decreased flow of tears on the operated side. Therefor, the fifth nerve does not control sensation in the soft palate, and the observation regarding the sense of taste clashes with the views of those who accept a duality of the nerves of taste. Another interesting fact observed by Dr. Brandão, but already mentioned by Princeteau and Descamps, is the variable emerging point of the great and small petrosal nerves. These nerves, and especially the first, may follow a long subdural course. Thus, if cut, there may be no chance of repair. This mishap is responsible for the pull on the facial nerve. To the same cause may be attributed the facial paralysis and ocular and lacrimal disturbances. In the third patient, it became necessary to insert considerable gauze into the angle formed by the base of the skull and the base of the brain and exert much pressure to check hemorrhage.

Tribute to Charcot

The National Academy of Medicine, May 29, celebrated the first centenary of Charcot's birth. Speeches on several phases of the great neurologist's work were delivered by Drs. A. Nascimento, J. Moreira, A. Austregesilo, H. Roxo and L. Rodrigues Ferreira. The meeting was attended by all the members of the Society of Neurology, Psychiatrics and Legal Medicine, as well as members of other medical societies. Charcot was made an honorary member of the National Academy of Medicine in 1888, when he saved the life of Emperor Peter II at Milan. As he was one of the physicians most revered in Brazil, the recent tribute was received with approval throughout the country.

BERLIN

(From Our Regular Correspondent)

July 11, 1925.

Justification of the Proposed Law Pertaining to the Combating of Venereal Diseases

In support of the proposed law on venereal diseases, which I discussed last week (The Journal, July 25, p. 283), the government has issued a justification, from which I have selected the following statements of general interest:

In 1919 a general inquiry was instituted throughout Germany to ascertain the number of patients who, during the period from November 15 to December 14, 1919, had received medical treatment for a venereal disease or for the sequels of syphilis, as a result of which 136,328 persons were reported by physicians, hospitals and the army medical corps. Of this number, 92,304 had received medical treatment before the time specified, while 44,024 came under treatment during the month chosen for the census. If we multiply the latter figure (44,024) by 12, we obtain 528,288 as the approximate number of new cases developing every year. This figure represents 8.7 per thousand of population (60,000,000 taken as the total population of Germany). The number of old cases amounted to 1.5 per thousand, showing that 10.2 per thousand, or more than 1 per cent. of the total population, is affected with venereal disease during the course of one year.

The crusade against venereal disease is rendered difficult because the patients often endeavor to keep their disease a secret and to escape from medical treatment. The improper or inadequate treatment recommended by laymen and the consequent delay in consulting a competent physician have, in countless cases, resulted in the disease taking on an incurable chronic form and being transmitted to others.

There was some thought of establishing a penalty for neglecting to accept medical treatment, but such legislation was given up for fear that it might result in a horde of incriminations, denunciations and blackmailings, and might prevent a venereal subject from seeking a physician after unsuccessful self-treatment or treatment by a layman.

Venereal disease cannot be combated successfully unless venereal subjects who are a constant menace can be compelled to accept medical treatment. The powers delegated to the board of health are not applicable solely to prostitutes but to both sexes without distinction. While it is true that infection is spread with extraordinary frequency by prostitutes, the law is aimed to an equal extent at that class of men (scarcely less dangerous) who practice promiscuous intercourse. In order that the health officers may be in a position to enforce prompt treatment, they must have the power to bring under a physician's care such persons as are strongly suspected of having a venereal disease and of transmitting it to others. Examination of suspects requires special knowledge and also entails special responsibility, since the result of the examination may furnish the basis for the adoption of drastic measures. It therefore does not appear advisable to grant every physician the right to issue health certificates. Repeated examinations will often be unavoidable. To prevent anything that might appear like arbitrary action, it seems best to place the power of requiring an examination in the hands of the board of health, which will take such action only on complaint of the examining physician.

In the ordinary penal code there are paragraphs covering the general subject of bodily injury, but they do not seem to have a deterrent and preventive effect, since they do not bring out clearly enough to the layman that they are applicable to infection with diseases, and especially with venereal diseases. Then, too, according to the penal code, an attempt is not punishable, and a penalty cannot be imposed unless the coitus actually resulted in infection with disease. Another obstacle that makes it difficult to prosecute offenders under the ordinary penal code is the fact that the causal relation between coitus and infection in an individual case is not easily established. A paragraph in the penal code cannot be expected to have much effect unless it provides a penalty for exposure. It seemed, therefore, advisable to combat the spread of venereal diseases by introducing a special paragraph pertaining to venereal subjects who, with full knowledge of their disease, indulge in sexual intercourse.

A special danger lies in the fact that, frequently, persons who have contracted a venereal disease enter into the marriage relation before they are sufficiently cured to eliminate the danger of infection. In order to enlighten persons in regard to this danger and to appeal to their conscience in the matter, the clerk in the magistrate's office who issues the license to marry is required to place in the hands of the engaged couple and of those whose consent to the marriage is needed, before he authorizes the publication of the bans, a special leaflet prepared by the federal health service entitled "Advice to Persons Contemplating Marriage." This leaflet emphasizes the importance of a medical consultation before entering on marriage and calls attention to the new legislation with respect to the responsibility of persons with venereal disease who are contemplating marriage. An officially approved leaflet containing the requisite advice and warnings is given out also by the physician who treats a venereal patient.

In no field of medicine do quacks and unauthorized healers do more harm than in their attempts to treat venereal disease. One chief danger lies in the fact that improper treatment, instead of effecting a cure, may lead to a marked exacerbation of the patient's condition. Of still greater importance, however (especially from the standpoint of the general public), is the time wasted with quacks, the delay in instituting necessary treatment, which permits the disease to become chronic and to remain infective for a long period. Especially in the smaller towns venereal subjects hesitate to consult regular physicians and resort to irregular practitioners, whose addresses are readily obtained from newspaper advertisements. Such advertisements often give testimonials and are frequently presented in a shameless and repugnant style, likely to impress ignorant and light-minded persons with the view that venereal diseases are not serious and that laymen can cure them readily and permanently. The law in its proposed form prohibits laymen from treating venereal patients.

Also physicians are prohibited from treating venereal patients in an improper manner or from offering their services in any way offensive to good taste or in contravention of the recognized precepts of the medical profession. Physicians who advertise in the daily press, by posters and like methods, their treatment of venereal patients, are for the most part without ethical scruples and extort all they can from their patients. To entice patients they frequently promise to cure them without interfering with their usual occupation. Renegade physicians often allow their names to be affixed to such misleading advertisements in order to attract patients for treatment by unconscionable quacks. Protection of patients against advertising physicians is imperative because the present bill, in order to make certain that venereal patients receive proper treatment, imposes on physicians the duty of notifying cases of venereal disease under certain conditions, which requirement, if used improperly, might make it difficult for timid patients ever to cut loose from such unconscionable physicians.

The measures adopted to combat the menace of venereal diseases are based primarily on the notification that the attending physician is required to make, just as the provincial laws enacted to combat other infectious diseases have introduced compulsory notification. The purpose of compulsory notification generally is to prevent the spread of disease by isolation of the patient and the institution of disinfective measures; but in the crusade against venereal diseases the chief considerations are to secure proper treatment without delay and by a follow-up system to see that the patient continues to be treated until he is no longer a potential source of infection. For the carrying out of a consistent course of treatment, compulsory notification can scarcely be dispensed with. In view of the need of discretion in connection with venereal diseases, it appears desirable that the physician's right of privileged communication with his patients be preserved as far as possible, since otherwise a patient's confidence in his physician would be seriously disturbed and he might be tempted on that account to resort to a lay practitioner. Compulsory notification, however, cannot be dispensed with in the cases in which the imperative danger of transmission of the disease to others requires immediate intervention. The physician should therefore be required to notify the authorities if the patient withdraws from medical treatment and thus from all sanitary supervision; or if, by reason of his (or her) occupation (e. g., as a barber or midwife), or on account of his personal relations (for example, mode of living), he constitutes a particular menace to others.

The persistent advertising, on the part of manufacturers and dealers, of multifarious remedies that are claimed to effect infallible cures in venereal diseases, is to be prohibited —especially since in the advertising of such remedies and procedures there often lurks a hidden inducement to commit abortion. In the public press, almanacs, illustrated pamphlets, and on covers and inserts of books the reader is confronted with glaring and often repugnant presentations of the alleged merits of remedies for venereal diseases, sometimes accompanied by illustrations, or by testimonials of doubtful authenticity in which physicians or alleged cured patients testify to the wonderful efficacy and healing power of the offered products.

It has been found that many of the articles and remedies thus recommended for the prevention of venereal diseases are totally unadapted to this purpose. They serve merely to cheat the purchaser while, owing to his misplaced confidence in their prophylactic effects, he exposes himself to further infection. The federal government assumes, therefore, the right to exclude from the market all such useless articles and remedies.

However, venereal diseases are transmitted not only through coitus but also by other intimate contacts; for example, syphilis especially through the act of nursing an infant. Wetnurses are therefore to be required to furnish a health certificate before entering on new duties, and no one shall be permitted to employ a wetnurse unless she presents a recent health certificate. On the other hand, in order to prevent an infant from infecting its nurse, a physician must give his written consent before any other person than the mother is allowed to nurse an infant. Also other venereal diseases besides syphilis may be transmitted from nurse to child or vice versa if the needed precautions as directed by the physician are not taken. Likewise, the entrusting of a child that is affected with a venereal disease to care-taking persons who are unaware of the child's condition may lead to a spread of the disease.

However, no penalty shall be imposed if a syphilitic child is nursed by a woman who is affected with syphilis. The nurse can suffer no harm and the child may be greatly benefited by the breast feeding.

Police supervision of prostitution is usually carried out in the following manner: The names of habitual prostitutes are entered in a special register; the women are then placed under police supervision and are required to submit to regular medical examinations and to accept treatment if found to be diseased. This system has proved inadequate, since the number of clandestine prostitutes is, in most cities, considerably greater than the number that are registered and are known to the police. In Berlin, for example, there are said to be ten times as many clandestine as there are registered prostitutes. It is the general experience that these unregistered women are more frequently diseased than those who are registered. No real success in the crusade against the spread of venereal diseases by prostitutes can therefore be expected unless some method is found to bring the unregistered women under medical treatment. Some time ago, Prussia made an attempt to accomplish this. An edict of the federal ministers having jurisdiction contemplated modifications in the law that would give the supervision of unchaste women a predominantly medical character. It was planned to establish medical consultation centers for prostitutes. Women affected with venereal disease were to be afforded an opportunity to secure gratuitous medical treatment. As long as the women could show that they were subjecting themselves to regular examinations, they were to remain free from molestation by the police. It was made known to these women that if they received a court sentence for immoral conduct they would be placed under police supervision. Every effort was to be made to induce these women to reform and to lead respectable lives. The expectation that the unregistered women would have confidence in the medical consultation centers thus established and that they would willingly make use of the offer of gratuitous treatment without coming in contact with the police proved to be unfounded, mainly for the reason, as it is assumed, that such a mild form of supervision was not consistent with the provisions of the penal code. The penal code serves as an obstacle because it makes it more difficult for these women to find living quarters, which compels them to carry on their unchaste commerce in secret for fear of losing their rooms. The penal code stands in their way because it leaves them exempt from punishment only in case they have placed themselves under police supervision.

According to the penal code, any one is subject to punishment as a procurer who habitually or for the purpose of gain aids or abets unchaste conduct through his mediation or through the granting or procuring of opportunities for unchastity. Allowing a person or persons the use of a dwelling or apartment for unchaste purposes shall be regarded as an act in aid and abetment of unchastity. Therefore, any one renting to these women rooms or apartments for unchaste purposes becomes guilty of procuration if he does so habitually or for purposes of gain. The expression "for purposes of gain" has been given in law such a wide interpretation that it is sometimes taken to mean the securing of ordinary rent for rooms or apartments. On account of this interpretation of the law, many house-owners and sublessors have been subjected to penalties who had no intention of deriving any special gain from the unchaste conduct of these women. This condition of affairs awakened no little anxiety among the acquaintances of persons thus penalized and caused them to be more cautious in renting out their rooms. This made it difficult for fallen women to find rooms. In order not to lose their rooms, they are compelled to keep their unchaste conduct a secret or to pay exorbitant prices to the landlord. If it is assumed that prostitution—at least in the large cities—cannot be suppressed, then it follows that these women should be allowed to have rooms or apartments; otherwise they are driven on to the street and carry unchastity into the homes.

Therefore, the proposed law provides no punishment for affording room or shelter, unless it can be shown that the person to whom the room was rented or to whom its use was allowed was exploited in some manner, or was urged or compelled to commit unchaste acts.

Marriages

James Monroe Thorington, Philadelphia, to Miss Christine Rehn of Germantown, Pa., June 12.

George Stoddard Reynolds, Pittsfield, Mass., to Miss Elizabeth Lee Hilles of New York, August 1.

Anson Phelps Stokes Hoyt, New York, to Miss Amy Jessup Moore of Scarsdale, N. Y., June 30.

Royal William Rudolph, Chicago, to Miss Bergliot Michelet Smith of Minneapolis, June 29.

Ralph Somers Walter to Miss Verda DeLaney Weatherby, both of Harrisburg, Pa., June 3.

Howell Colman Crissman, Detroit, to Miss Zita Loretta Doyle of Perth, Ont., Canada, June 30.

Lambert John Geerlings, Fremont, Mich., to Miss Bertha Schweissenger of Muskegon, June 25.

John Shelton Horsley, Jr., to Miss Lillian Waller Holladay, both of Richmond, Va., June 24.

Arthur D. Woods, State Center, Iowa, to Miss Eldora Benteman, of Montezuma, recently.

Arthur M. Stokes, Union Hill, N. Y., to Miss Josephine Shoemaker of Rochester, June 6.

Leroy B. Elliston, La Salle, Ill., to Miss Ida Wurst of Morton, at Peru, July 9.

Percy Everett Schools to Miss Evelyn Mallory, both of Richmond, Va., June 3.

Ezra Eugene Neff, Madison, Wis., to Miss Ruth Perry of Beverly, Mass., June 2.

Seward R. Davison to Mrs. Elizabeth Owen, both of Johnstown, Pa., May 4.

John Robert Richardson, to Miss Hope Wood, both of Atlanta, Ga., June 30.

Deaths

Albert John Ochsner ⊕ one of the most eminent surgeons in the United States, died at his home in Chicago, July 25, of angina pectoris. He was born in Baraboo, Wis., April 3, 1858, and received his degree of B.Sc. from the University of Wisconsin in 1884 and the M.D. from Rush Medical College in 1886. Dr. Ochsner then studied in the clinics of Vienna and Berlin for two years, and returned to this country in 1888. At this time he married Marion H. Mitchell of Chicago and began the practice of medicine. Turning gradually to a special interest in surgery, he became the chief surgeon of Augustana Hospital and St. Mary's Hospital in 1896. In 1900 he was made professor of clinical surgery in the medical department of the University of Illinois, which position he held continuously until his death. In 1900 his progress in surgery was recognized by his election to the chairmanship of the Section on Surgery of the American Medical Association. In 1910 he was president of the Clinical Congress of Surgeons of North America; in 1923, president of the American College of Surgeons, and in 1924, president of the American Surgical Association. He was also a member of the Southern Surgical and Gynecological Society and an honorary fellow of the Royal College of Surgeons of Ireland and the Royal Microscopical Society of England. Dr. Ochsner was widely known for his championship of the starvation method of treating appendicitis, which served to stem the flood of operations that occurred when the diagnosis and pathology of this condition became definitely established. He published his "Handbook on Appendicitis" in 1906. His clinic became a mecca for visiting surgeons because of its systematic organization and its extensive clinical material. This practice was exemplified by books on "Clinical Surgery for the Instruction of Practitioners and Students," 1905; "Surgery of the Thyroid and the Parathyroid Glands," 1910; "A Treatise on Surgical Diagnosis and Treatment," 1918, and a continuous editorship of the "Year Book of Surgery" from 1917 to 1923. Under his leadership the Augustana Hospital developed rapidly, a large new wing being added during the current year. A book on the "Organization, Management and Construction of a Hospital" by Dr. Ochsner appeared in 1907, reflecting his experience in this field.

Albert J. Ochsner, M.D., 1858-1925

Dr. Ochsner was a familiar figure at all medical conferences and congresses His striking personality and appearance and the invariable wearing of the white standing collar and white linen tie made him especially conspicuous. He never hesitated to take part in discussions, and his breadth of experience and wide travel made his contributions forceful and interesting. He spoke always for the highest type of surgical ethics and medical practice.

John Martin Gile ⊕ Hanover, N. H.; Dartmouth Medical School, Hanover, 1891; life member of the board of trustees, professor of practice of medicine, 1896-1910, and since 1910, dean and professor of clinical surgery at his alma mater; in 1906 and in 1907 he served as a member of the House of Delegates, and in 1907 was a member of the reference committee on Rules and Order of Business of the House of Delegates of the American Medical Association; member of the Massachusetts Medical Society, and the New England Surgical Society (president 1920-1921); aged 61; died suddenly, July 15, of angina pectoris.

William Perry Watson, Jersey City, N. J.; Medical Department of Columbia College, New York, 1878; member of the Medical Society of New Jersey; past president of the American Pediatric Society; member of the New Jersey State Board of Medical Examiners; director emeritus of the Prudential Insurance Company, Newark; served at various times on the staffs of St. Michael's Orphanage, St. Francis Hospital, Christ Hospital and the City Hospital, where he died, July 17, of pneumonia, which followed injuries received in an automobile accident, aged 71.

Ernest William Haass ⊕ Detroit; University of Michigan Medical School, Ann Arbor, 1892; member of the American College of Physicians, and the Detroit Society of Neurology and Psychiatry; formerly associate professor of medicine, Detroit College of Medicine and Surgery; at one time member and president of the city board of health; chief of staff at the Harper Hospital, 1910-1913; aged 54; died, July 10, following an operation for brain abscess.

Sigmar Stark ⊕ Cincinnati; Bellevue Hospital Medical College, New York, 1884; director of service in the department of gynecology and professor of gynecology, University of Cincinnati College of Medicine; member of the American Association of Obstetricians and Gynecologists, and the Cincinnati Obstetrical Society; aged 62; died suddenly, July 15, at Carlsbad, Czechoslovakia, of heart disease.

Robert Edward Stevens ⊕ Rochelle, Ill.; College of Physicians and Surgeons, Chicago, 1904; past president of the Ogle County Medical Society; formerly health officer of Rochelle; served in the M. C., U. S. Army, during the World War; aged 46; died, July 11, at the Lincoln Hospital, of peritonitis, following an appendectomy.

William Conwell Smith, Rushville, Ind.; Medical College of Ohio, Cincinnati, 1891; past president of the Rush County Medical Society; formerly county physician, city health commissioner and secretary of the city board of health; aged 59; died, July 9, at the Southeastern Hospital for the Insane, North Madison.

Rufus Beech Scarlett ⊕ Erie, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1901; member of the American Laryngological, Rhinological and Otological Society, and the Philadelphia Laryngological Society; aged 47; died, July 11, at Westminster, following a long illness.

Elmer James Updegraff ⊕ Los Angeles; University of Nebraska College of Medicine, 1899; member of the Nebraska State Medical Association; formerly adjunct professor of the practice of surgery at his alma mater; aged 68; died, July 9, at the Hollywood Hospital, of heart disease.

Bacon Saunders ⊕ Forth Worth, Texas; University of Louisville (Ky.) School of Medicine, 1877; professor of clinical surgery, Baylor University College of Medicine, Dallas; member of the Southern Surgical Association; aged 70; died, July 15, at Colorado Springs.

George Herbert Bridgman, Keene, N. H.; Medical School of Harvard University, Boston, 1881; formerly United States Minister to Bolivia and United States Consul to Jamaica; aged 72; died, July 10, of coronary thrombosis.

Charles Lewis Atkinson, Brooklyn; Long Island College Hospital, Brooklyn, 1900; member of the Medical Society of the State of New York; aged 52; died suddenly, July 16, of angina pectoris.

⊕ Indicates "Fellow" of the American Medical Association.

John B. Hilliker, Grand Rapids, Mich.; College of Physicians and Surgeons, Chicago, 1892; for twenty-one years county coroner; member and at one time president of the board of education; aged 65; died, July 6, of heart disease.

Roy Eugene Hughes, Gainesville, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1908; member of the State Medical Association of Texas; aged 37; died, July 12, of burns received in an aeroplane accident.

Robert G. McTaggart, Cleveland; Medical Department of the University of Wooster, Cleveland, 1885; formerly on the staffs of St. John's and St. Alexis' hospitals; aged 63; died, July 13, at the Lutheran Hospital, of pneumonia.

Archie West Crary, Stockton, Calif.; State University of Iowa College of Medicine, Iowa City, 1906; formerly a practitioner in Iowa; veteran of the Spanish-American War; aged 49; died, June 30, following a long illness.

Charles Chase Walsh ⊕ Merrill, Wis.; State University of Iowa College of Medicine, Iowa City, 1889; president of the Lincoln County Medical Society; aged 62; died, July 7, at St. Mary's Hospital, Wausau, of septicemia.

Louis James Oatman, St. Louis; Marion-Sims College of Medicine, St. Louis, 1893; Barnes Medical College, St. Louis, 1900; member of the Missouri State Medical Association; aged 54; died, July 1, of angina pectoris.

Minerva M. Knott, Glendale, Calif.; University of Michigan Medical School, Ann Arbor, 1895; member of the Missouri State Medical Association; aged 58; died, July 8, at a local hospital, following an operation.

James Francis Gilbert, Woonsocket, R. I.; College of Physicians and Surgeons, Boston, 1910; member of the Rhode Island Medical Society; also a dentist; aged 48; died, July 1, at Providence, of septicemia.

Isaac MacMunn Holly, Brooklyn; Long Island College Hospital, Brooklyn, 1897; served in the M. C., U. S. Army, during the World War; aged 57; died, July 10, as the result of an old roentgen-ray burn.

Wayland Sharp Hough, Cuyahoga Falls, Ohio; University of Wooster Medical Department, Cleveland, 1866; member of the Ohio State Medical Association; Civil War veteran; aged 81; died, July 4.

William Calvin Hawk, Bay City, Ore.; Rush Medical College, Chicago, 1884; member of the Oregon State Medical Society; aged 73; died, July 1, of injuries received in an automobile accident.

William Theodore Lochemes, Milwaukee; Wisconsin College of Physicians and Surgeons, 1896; member of the State Medical Society of Wisconsin; aged 62; died, July 17, following a long illness.

Daniel Edwin O'Neil ⊕ Cape May, N. J.; Medical Department of the University of the City of New York, 1869; member of the Medical Society of the State of New York; aged 78; died, July 16.

John Lafayette Marshall, Greenwood, S. C.; Medical College of the State of South Carolnia, 1913; member of the South Carolina Medical Association; aged 44; died, July 9, of pneumonia.

Sampson J. Robertson, McDowell, Mo.; St. Louis College of Physicans and Surgeons, 1893; member of the Missouri State Medical Association; aged 58; died suddenly, July 3, of heart disease.

John Wilmer Peck, Hensall, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1914; aged 37; died, June 28, at St. Joseph's hospital, London, following an operation.

James Edward Edwards, Spartanburg, S. C.; College of Physicians and Surgeons, Chicago, 1905; member of the South Carolina Medical Association; aged 47; died, July 6, of uremia.

Nathan O. Harrelson ⊕ Kansas City, Mo.; Kansas City Medical College, 1894; aged 56; died, July 2, at the Trinity Lutheran Hospital, of empyema following broncho-pneumonia.

John Wilson Mowell ⊕ Olympia, Wash.; Missouri Medical College, St. Louis, 1888; on the staff of St. Peter's Hospital; aged 64; died, July 7, following a long illness.

Charles Eaton Lawton, South Orange, N. J.; Medical Department of Columbia College, New York, 1877; aged 69; died, July 4, at Waterville, Me., of broncho pneumonia.

Eli Marion Hoover, Halstead, Kan.; American Medical College, St. Louis, 1885; formerly mayor of Halstead; aged 75; died suddenly, July 11, of cerebral hemorrhage.

James E. Inskeep, Mount Carmel, Ill.; Eclectic Medical Institute, Cincinnati, 1877; county coroner; aged 73; died, July 9, following a long illness, of diabetes mellitus.

John Ewing Haughey ⊕ Rockford, Ill.; Rush Medical College, Chicago, 1891; on the staff of St. Anthony's Hospital; aged 62; died, July 6, of carcinoma of the stomach.

Joseph Frank Slepicka ⊕ Suttons Bay, Mich.; Rush Medical College, Chicago, 1903; aged 47; died, July 10, at St. Luke's Hospital, Chicago, of chronic nephritis.

Lucian G. North, Tecumseh, Mich.; University of Michigan Medical School, Ann Arbor, 1877; for many years member of the board of education; aged 74; died, July 9.

Daniel Elmer Lane, Alhambra, Calif.; Hahnemann Medical College and Hospital, Chicago, 1878; aged 72; died, July 8, at the Good Samaritan Hospital, Los Angeles.

Edwin Oscar Colvin, Baker, Mont.; University of Michigan Medical School, Ann Arbor, 1895; aged 70; died, in July, at Kenosha, Wis., of pernicious anemia.

Thomas George Tayler, Green Mountain, Iowa; Jefferson Medical College of Philadelphia, 1886; aged 62; died, July 13, at the Deaconess Hospital, Marshalltown.

Thomas Augustine Maher, Bancroft, Iowa; State University of Iowa College of Medicine, Iowa City, 1906; aged 45; died suddenly, July 9, of heart disease.

George Alfred Evans ⊕ Brooklyn; Bellevue Hospital Medical College, New York, 1873; member of the American College of Physicians; aged 74; died, July 14.

Samuel Goode Mobley, Johnston, S. C.; Jefferson Medical College of Philadelphia, 1856; aged 90; died, July 10, at the Margaret Wright Hospital, Augusta.

John W. Hyatt, Placerville, Calif.; Starling Medical College, Columbus, 1890; also a lawyer, aged 64; died recently, of peritonitis following appendicitis.

William Tefft, Dunkirk, N. Y.; University of Buffalo Department of Medicine, 1890; aged 65; died, July 1, of embolism and chronic nephritis.

John Francis Denham, Boyceville, Wis.; Hahnemann Medical College and Hospital, Chicago, 1896; aged 67; died, July 12, of cerebral embolism.

James S. Ross, Okolona, Ark.; Medical Department University of Louisiana, New Orleans, 1878; aged 71; died suddenly, July 5, of heart disease.

Edward Payson King, Gary, Ind.; Fort Wayne College of Medicine, 1897; veteran of the Spanish-American and World wars; aged 51; died, July 10.

Arthur Lewis Seeley ⊕ Mayville, Mich.; Detroit Medical College, 1884; aged 65; died, July 7, at a hospital in Detroit, following a prostatectomy.

Willis G. Nesbitt, Cleveland; Western Reserve University School of Medicine, Cleveland, 1882; aged 67; died, July 2, of cerebral hemorrhage.

Thomas F. Hogg, Allendale, S. C.; Medical College of the State of South Carolina, Charleston, 1903; aged 45; died, June 19, of tuberculosis.

Van Glenn Yeager, Alexandria, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1909; aged 42; died, in July.

Henry C. Suess, Pomona, Calif.; Hahnemann Medical College of Philadelphia, 1878; formerly a practitioner in Kansas; aged 81; died, July 2.

Lawrence Arthur Beers, Salmon, Idaho; College of Physicians and Surgeons, Baltimore, 1880; aged 69; died, in June, of aortic insufficiency.

Brontz Luther Cowen, Waynesburg, Pa.; Jefferson Medical College of Philadelphia, 1909; aged 42; died, July 12, of epidemic encephalitis.

Alfred J. Baxter, Astoria, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 70; died, July 10, of chronic nephritis.

Reid Ringer ⊕ Monon, Ind.; Indiana University School of Medicine, Indianapolis, 1923; aged 28; died, July 1, of cerebral hemorrhage.

Samuel Leigh Southard Smith, San Angelo, Texas; University of Michigan Medical School, Ann Arbor, 1873; aged 79; died, July 7.

Henry Tilge Johnson ⊕ Pedricktown, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1878; aged 71; died, July 4.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

McFERRIN, THE HUMOROUS "DIET SPECIALIST"

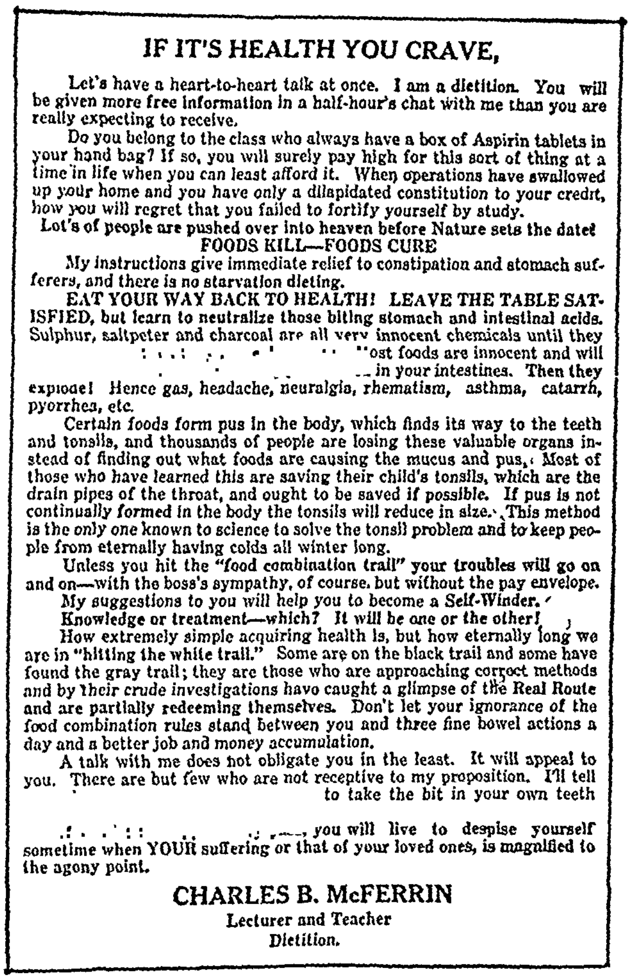
More Pseudo-Science in the Field of Nutrition

In the present year of grace there is no more fertile field for quackery and pseudo-scientific buncombe than in that pertaining to diet. The ineffable nonsense on this subject published by the Macfaddens, the Brinklers, the Lusts, the Tildens, et al., is bearing fruit among that large portion of the population whose mentality approaches that of the child of twelve. The stock in trade of these false prophets of nutrition is made up of 5 per cent. platitudes of elementary dietetics and 95 per cent. nonsense. The followers of the prophets are unable to distinguish between the platitudes and the flapdoodle.

For two or three years The Journal has been receiving inquiries, chiefly from physicians, but occasionally from laymen, regarding the scientific status of one "Doctor"—sometimes "Professor"—Charles B. McFerrin, who describes himself as a "Food Scientist, Diet Specialist, Humorist." McFerrin has his headquarters in Chicago, although he seems to spend his time largely in the South giving "lectures" on "food science" and diet, and organizing "courses" among women, who seem to furnish his main audience, each member it is said paying $15 for the "course." As indicative of the character of the inquiries The Journal has received, the following may be quoted:

A physician from Washington, D. C., wrote:

> "While in the South recently (Tennessee) I was told a great deal about Professor Charles B. McFerrin. He had been in several sections telling the people how to keep well and had been selling them courses of instruction and literature. He had made many friends and followers. I saw a copy of his *Health Bulletin* and came to the conclusion that McFerrin is very much of a quack."



IF IT'S HEALTH YOU CRAVE,

Let's have a heart-to-heart talk at once. I am a dietition. You will be given more free information in a half-hour's chat with me than you are really expecting to receive.

Do you belong to the class who always have a box of Aspirin tablets in your hand bag? If so, you will surely pay high for this sort of thing at a time in life when you can least afford it. When operations have swallowed up your home and you have only a dilapidated constitution to your credit, how you will regret that you failed to fortify yourself by study.

Lot's of people are pushed over into heaven before Nature sets the date!

FOODS KILL—FOODS CURE

My instructions give immediate relief to constipation and stomach sufferers, and there is no starvation dieting.

EAT YOUR WAY BACK TO HEALTH! LEAVE THE TABLE SATISFIED, but learn to neutralize those biting stomach and intestinal acids. Sulphur, saltpeter and charcoal are all very innocent chemicals until they [illegible] "ost foods are innocent and will [illegible] in your intestines. Then they explode! Hence gas, headache, neuralgia, rhematism, asthma, catarrh, pyorrhea, etc.

Certain foods form pus in the body, which finds its way to the teeth and tonsils, and thousands of people are losing these valuable organs instead of finding out what foods are causing the mucus and pus. Most of those who have learned this are saving their child's tonsils, which are the drain pipes of the throat, and ought to be saved if possible. If pus is not continually formed in the body the tonsils will reduce in size. This method is the only one known to science to solve the tonsil problem and to keep people from eternally having colds all winter long.

Unless you hit the "food combination trail" your troubles will go on and on—with the boss's sympathy, of course, but without the pay envelope.

My suggestions to you will help you to become a Self-Winder.

Knowledge or treatment—which? It will be one or the other!

How extremely simple acquiring health is, but how eternally long we are in "hitting the white trail." Some are on the black trail and some have found the gray trail; they are those who are approaching correct methods and by their crude investigations have caught a glimpse of the Real Route and are partially redeeming themselves. Don't let your ignorance of the food combination rules stand between you and three fine bowel actions a day and a better job and money accumulation.

A talk with me does not obligate you in the least. It will appeal to you. There are but few who are not receptive to my proposition. I'll tell [illegible] to take the bit in your own teeth [illegible] you will live to despise yourself sometime when YOUR suffering or that of your loved ones, is magnified to the agony point.

CHARLES B. McFERRIN
Lecturer and Teacher
Dietition.

Reproduction (greatly reduced) of one of the advertising "dodgers" used by "Dr." Charles B. McFerrin the "Dietitian." The style seems to be a hybrid—a cross between that of Eugene Christian's and Billy Sunday's.

A physician from Vicksburg, Mississippi, wrote:

> "A Professor McFerrin has been giving lectures in Vicksburg this past week. The lectures consist of a series of talks on diet, at $15 a member. I think he is a faker of the worst sort, though his lectures constantly boost the family physician."

This letter, addressed to the director of the Bureau of Investigation, came from a public school teacher:

> "I am writing you at the suggestion of Dr. Harvey W. Wiley. Do you know anything of Dr. McFerrin of Chicago? He gave some lectures, which I attended, and I would like to know his standing as a food expert before I follow his advice. I have diabetes and he advised raisins, figs, dates and Spanish peanuts. As that is unusual I wrote to Dr. Wiley."

From a physician in Virginia came this inquiry:

> "Please give me any information you may have as to Dr. (?) Charles B. McFerrin, self-styled expert on dietetics, who has victimized the Civic League women in this town to the extent of about $500 in a series of perfectly absurd lectures."

THE SYSTEM

Mr. McFerrin begins by getting in touch with women's organizations throughout the South and offering to deliver one or two free lectures. The free lectures are, apparently, used as advertisements for his "courses" in dietetics. He also, it appears, prescribes individual dietaries for which he makes a charge. His chief "free" talk is described as "his celebrated lecture 'What's the Matter with Everybody?'" He has, too, a special talk which is announced, somewhat loosely, in the advertising leaflets as "his celebrated lecture on 'Foods That Explode in the Intestines,' to Women Only." Just what foods do explode in the intestines, presumably of "women only," is not mentioned, but the subject may have interesting possibilities.

Knowing that physicians are opposed to the exploitation of the sick and the near-sick, and possibly fearing that he may expect criticism from the medical profession, Mr. McFerrin anticipates the inevitable and endeavors to placate by telling what wonderful fellows physicians are. He sends out a form-letter to the physicians in the town in which he is about to deliver his "lectures" and give his "courses." This communication opens with the statement that he always discourages the use of worthless "patent medicines" and advises medical examination by the physician at least twice a year. It is followed up with the statement that his "work includes instruction and admonition only—no treatment of any kind," and *suggests* that following his "course" people are likely to call on the physician for advice and treatment. He also has distributed a little card printed in two colors, panegyrizing the doctor. It is typical "Pollyanna."

AWFUL POSSIBILITIES IN TOMATOES AND POTATOES

Mr. McFerrin seems to have drunk deep of those Pierian springs of pseudo-dietetic inspiration that emanate from such sources as Eugene Christian, Alsaker, Brinkler and others of similar caliber. In one of his advertising leaflets, inviting the public to attend his free lecture, he enlarges on the theme that "some people have never yet sat down to a scientific meal," thus:

> "They do not know that the combining of stewed tomatoes and creamed or mashed potatoes has a strong tendency to tear up the mucus lining of the stomach and intestines, causing constipation, and a general acid or 'sour' condition of the body, making asthma, nervousness, rheumatism and other maladies possible."

In the same leaflet McFerrin hands out this informative gem:

> "Certain foods also form mucus and pus in the tonsils, kidneys and teeth, and are at the bottom of much catarrhal trouble."

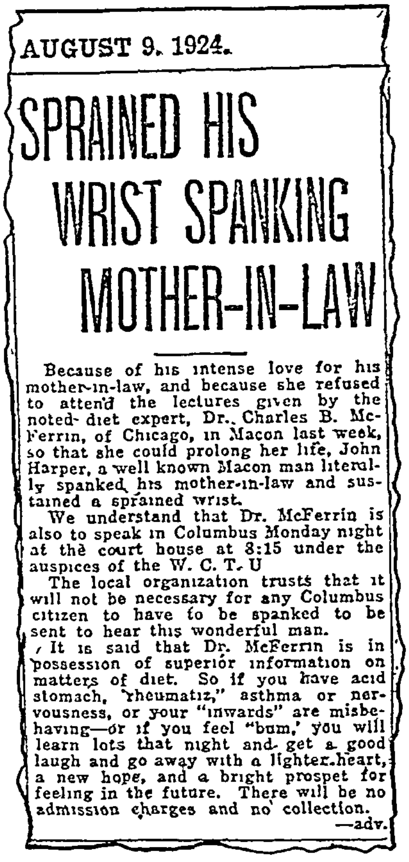
He also lays down the dictum that "neuritis sufferers should not eat grape-fruit" and that "nervous people should not eat honey." These same advertising leaflets—which are so prepared as to give the impression that a local organization puts them out rather than McFerrin himself—assert that "there are only four lecturing diet experts in the United States," and, therefore, the townspeople "should consider themselves fortunate indeed" to have the opportunity of listening to "so distinguished a gentleman as Professor McFerrin."

THE HIGH EXPLOSIVE FOODS

Like Mr. Eugene Christian, Mr. McFerrin thinks that foods have TNT possibilities. Says he: "Most foods are innocent and will build you up until they are wrongly combined in your intestines. THEN THEY EXPLODE! Hence gas, headache, neuralgia, rheumatism, asthma, catarrh, pyorrhea, etc."

Those who read the exposé in *Hygeia* may remember the theory propounded by that picturesque food faddist, J. H. Tilden, of Denver: Every disease is due to toxemia; toxemia is due to enervation; enervation is due to improper eating. The one fascinating thing about cults and fads is the simplicity of their philosophy; it can be grasped by the veriest moron. Mr. McFerrin's pathology differs slightly from that of Tilden's but it is equally elementary. He states that "instead of there being six hundred diseases as we are told, there is only one, and that is MAL-NUTRITION." McFerrin insists that "most people do not know any more about how to prepare a health meal than a four-weeks-old puppy." Such ignorance must be a marvellous asset to McFerrin.

In addition to the lectures that are free and the courses and prescriptions that are charged for, Mr. McFerrin has for sale *Health Bulletins.* These are a weird mixture of elementary dietetics, quotations from faddists such as Macfadden, Lindlahr, Alsaker, Tilden, and Eugene Christian, and advertisements of fads and quackeries. A good deal of the advertising in the *Bulletin* is devoted to "Dr." Charles B. McFerrin himself. There is a full-page Alsaker advertisement, a half-page of the Lindlahr "nature cure" concern, a full-page dealing with "Inner-Clean," said to be "An Aromatic Herb Compound, Progressively and Thoroughly Cleansing and Rejuvenating Relaxed, Flabby Intestines and Restoring Normal Activity." This last wonder is put out by the Alert Food Supply Co. of Brewton, Alabama. Then there are two full pages devoted to "Porter's Nature-Sweets" put out by Porter's Trufoods, Inc. More than a page is taken in advertising some products of the Natur-Way Company. Incidentally it is worth noting that both Porter's Trufoods, Inc., and the Natur-Way Co. have occupied the same room in the Chicago office building used by McFerrin for his headquarters.



AUGUST 9, 1924.

SPRAINED HIS WRIST SPANKING MOTHER-IN-LAW

Because of his intense love for his mother-in-law, and because she refused to attend the lectures given by the noted diet expert, Dr. Charles B. McFerrin, of Chicago, in Macon last week, so that she could prolong her life, John Harper, a well known Macon man literally spanked his mother-in-law and sustained a sprained wrist.

We understand that Dr. McFerrin is also to speak in Columbus Monday night at the court house at 8:15 under the auspices of the W. C. T. U

The local organization trusts that it will not be necessary for any Columbus citizen to have to be spanked to be sent to hear this wonderful man.

It is said that Dr. McFerrin is in possession of superior information on matters of diet. So if you have acid stomach, "rheumatiz," asthma or nervousness, or your "inwards" are misbehaving—or if you feel "bum,' you will learn lots that night and get a good laugh and go away with a lighter heart, a new hope, and a bright prospet for feeling in the future. There will be no admission charges and no collection.

—adv.

A specimen (reduced) of the type of local advertising done by McFerrin.

THE EPSOM SALT BATH

The amount of misinformation contained in any one copy of McFerrin's *Health Bulletin* is much too large to be dealt with in detail in an article of this length. A few examples must suffice. On the first page of one of the *Bulletins* we are told of "The Value of the Epsom Salts Bath." A few quotations from this article will give an idea of McFerrin's conception of physiology and pathology:

> "Sickness generally means too much carbon in the body; this carbon may be in the form of mucus; it generally is.
>
> "Epsom Salts water applied externally as a sponge bath or by use by immersion in the bath tub has a wonderful affinity for carbon, fairly pulling it out of the body. . . ."
>
> "For headaches, sore throats or almost any trouble in distant parts of the body, the neck pack or bandage seems to reach the spot and give much relief. This is because every artery or vein, large or small, of course, passes through the neck and much poison is extracted from the blood as the blood flows through the neck near the Epsom Salts water.
>
> "After an hour's soak in warm water in a bath tub, one may add two or three pounds of Epsom Salts and draw much carbon from the innermost recesses of the body This is exceedingly helpful in rheumatism particularly. In catarrhal troubles it is a boon, also in asthmatic conditions and also in nervousness"

In the same *Bulletin* there is a longer article on "The Tissue Elements, or Cell Salts" in which we are told that "silica does much toward absorbing poisonous gases in the stomach and bowels, and will do its part toward eliminating catarrh," while "chlorine is indispensable in biliousness" and potassium "is death to malarial fever," not forgetting that "sodium is valuable in eliminating uric acid."

Another article in the same issue discusses "Mucus Forming Foods." McFerrin admits that "the idea that certain foods form mucus is a new one to many people," in fact, "many physicians do not seem to understand this." When we cease eating "mucus forming foods," however, catarrh disappears, while it has been found that gray hair returns to "former youthful shade of brown."

Then it seems soap is a bad thing. Thus McFerrin:

> "The use of soap is at the bottom of several of our troubles. I have known of bed wetting that has been stopped the day that the afternoon warm soap bath ceased. Many cases of kidney trouble are almost immediately improved when soap is not used on the skin."

Corn meal should be used in the place of soap, according to McFerrin, because:

> "There are two hundred miles of blood capillaries in your skin which have not had much fresh oxygen and not been able to give up their poisons for years due to the ruined condition of your skin after soap baths."

ATTAINING SUCCESS IN LOVE AND BUSINESS

Most cults nowadays find it good policy in connection with their offers of short cuts to physical perfection to devote a certain amount of time to persuading their followers that they also offer short cuts to financial and social success. This particular drawing card has been highly developed by the followers of Mrs. Eddy. McFerrin, not to be left in the lurch, recommends what he calls "The Rhythmic or Success Breath." This particular brand of breathing is one in which the length of time required to inhale and exhale the air into and from the lungs are equal. The "success" feature is thus described.

> "It has been proved by thousands of our deepest thinkers that if during the progress of the slow rhythmic breathing one will keep the mind on some one thing he may desire, love, harmony, business success, attractiveness, money, etc., that the act of the will power in demanding these things at the same time the breaths are taken will invariably bring about the conditions or things desired."

Mr. McFerrin is convinced that this is a good thing because he has tried it "many a time and finds that it works."

It is probably not necessary to say by this time that Mr. McFerrin holds the opinion that micro-organisms never cause disease. According to him, pathogenic bacteria are merely "the germ bugaboo."

MARVELS OF THE NEUTRAL BATH

The neutral bath, which of course has a proper though limited place in balneotherapy, is put forward by McFerrin as a veritable panacea. His idea is that by keeping the body immersed for hours at a time in water at body temperature miraculous results will be obtained. McFerrin's thesis is that "there are relaxing foods and there are contracting foods and people generally are eating a predominance of the latter class, therefore their muscles are terribly contracted." To take the contraction out of the body one indulges in the "neutral bath." The long soak is said to soften and relax the larger muscles so that no matter what your troubles may have been they gradually disappear. Furthermore, after three hours in the tub "the water penetrates the internal organs in a manner floating them and relieving much pressure on each other," while in from six to nine hours "the liver is wonderfully purified" and "gall stones many times soften and pass away with ease, thus saving an expensive and painful operation."

Enough has been said to make plain to the reader the utter lack of scientific background exhibited by the "Doctor-Professor" Charles B. McFerrin—Food Scientist, Diet Specialist, Humorist. In addition to the sale of courses and individual prescriptions and *Health Bulletins*, McFerrin also charges $2 for each letter of information that he writes—which would be cheap enough if the information were trustworthy. Then he has a "Corrective Dietary List," price $5, and "Special Diet for the Unborn," price $10. "Dr. McFerrin's Kitchen and Dining Room Chart" printed in two colors, comes at $2.50—"study this chart and stop poisoning your body!" But the really big thing is the "Atonement Dietary Service, Dr. Charles B. McFerrin, Founder." An elaborate, two-page questionnaire comes with the McFerrin *Health Bulletin*. This the prospective patient is asked to fill out and send with a remittance of $5. In addition to inquiries about "torpid" liver, "acid" stomach, "tender" bowels, etc., one question reads: "If you are a woman state your husband's occupation?" This, we take it, is to enable Mr. McFerrin to judge the financial possibilities of a patient so that he may temper the financial wind to the lamb that is about to be shorn. Elsewhere in speaking of this "Atonement Dietary Service" Mr. McFerrin states:

> "Prices range from a $5 diet to $500. Even the highest price is cheaper than a single operation or a funeral."

Summed up, one is probably doing "Food Scientist, Diet Specialist, Humorist" McFerrin no injustice in declaring that as a "food scientist" and "diet specialist" he is a "humorist."

Correspondence

ALTERNATING SQUINT

To the Editor:—If there was ever such as thing as the "last word," it would seem to have been uttered in the paper on alternating squint, by Goar, and the subsequent discussion at the Atlantic City session (The Journal, July 11). But, since a universal motor aphasia is not within the purview, a few more, if they are to the point, can do no harm. Syllogistically, if the statement is true, as assumed, that alternating squint is not amendable to orthoptic measures, the employment of such measures, before or after operation, as suggested, partakes of the non sequitur conclusion. On the other hand, if orthoptic exercises are profitable after operation it may be error to predicate that they are not all-sufficient—in some cases duly selected, as in mononcular squint. A one year time limit is wholly arbitrary. But, whatever may be thought of this academic presentation, the fact that has provoked it is more significant. This fact is that I have recently seen a patient, a bright girl, aged 13 years, who, in spite of much discouragement, has persisted for four years with orthopetic exercises, with the result that a deviation of 25 degrees (perimeter arc) has been reduced to 5 degrees, with fleeting periods of parallelism. It is likewise noteworthy that marked improvement followed a concession to her desire for the largest round lenses her face would bear. I do not pretend to account for this change. I am simply wondering how many more factors there may be in squint.

H. B. Young, Burlington, Iowa.

"INTRANASAL DISEASE IN THE PRODUCTION OF BRONCHIAL ASTHMA"

To the Editor:—Intranasal operations for the cure of true bronchial asthma are still popular, and yet in my experience invariably futile. I feel that no apology is necessary for the following comment on the article entitled "Intranasal Disease in the Production of Bronchial Asthma" by M. J. Gottlieb, which appeared in The Journal, July 11.

After reading the article, one gets the erroneous impression that intranasal operations are of benefit in the relief of true bronchial asthma. If this were so, one would certainly have a right to expect results from intranasal operations in the "absorption cases," "where purulent disease is found (in the nose) and the symptoms are the result of absorption of protein material from the diseased area." As a matter of fact, the two cases cited under this heading yielded no results after intranasal treatments and operations. Results were obtained only after intravenous use of typhoid vaccines. From personal experience, I know that the same good results can be obtained by the intravenous use of typhoid vaccine without previous nasal operations.

The time mentioned in the cases cited is comparatively so short that I feel one is not justified to draw conclusions as to the efficacy of any line of treatment in such a disease as bronchial asthma, which is characterized by a spontaneous remission of symptoms of variable interval.

I feel, after a careful study of the author's cited cases, that one is justified to expect under "conclusions," the following sentence: "Intranasal operation as a cure for bronchial asthma is futile."

William Lintz, Brooklyn.

ABSENCE OF TULAREMIA (RABBIT FEVER) AMONG RABBITS RAISED IN RABBITRIES

To the Editor:—Within the last three years, authoritative articles have appeared describing a new disease of man, tularemia. These articles have stated that the disease was contracted from dissecting or dressing rabbits sick with "rabbit fever," as in the case of market men, cooks, hunters and fishermen.

Thus far the only rabbits found infected in nature with "rabbit fever" have been the wild rabbits—cottontails, jack rabbits and snowshoe rabbits—not the domestic rabbits raised in rabbitries for food or for laboratory purposes, or raised by fanciers under the names of Belgian hares, Flemish giants, New Zealand breeds, etc.

Publication of these articles has caused instances of confusion in the public mind, resulting in prejudice against continuing the use for food or for pets of domestic rabbits raised in rabbitries. That prejudice is without any foundation whatever, and on all occasions the opportunity has been embraced to restate the observation that "rabbit fever" has never been encountered in nature in domestic rabbits raised in rabbitries, nor has tularemia been contracted by man from eating or handling such rabbits, but only from wild rabbits. The cooked rabbit-meat is harmless.

Edward Francis, M.D., Washington, D. C.

HEREDITARY BLINDNESS

To the Editor:—In the report of the Committee on Hereditary Blindness presented to the Section on Ophthalmology at the recent session of the Association (The Journal, July 18, p. 192), the following statement appears: "Various estimates thus far made by students of this question have placed the number of those blind in the United States from hereditary causes as from about 75,000 to 100,000." Such a number would be truly appalling if the facts substantiated this statement, but I fear that the committee has been greatly misled in its statistics. The 1920 United States Census places the total number of blind in the United States at 57,444 persons. As this number represents practically no increase over the similar item given in the 1910 census, we may conclude that the number of blind from all causes in the United States at the present time is not far different from that just stated. We do not know what proportion of the blind are blind from hereditary causes, but Dr. Clarence Loeb (*Ann. Ophth.* 18, 1909) made a careful investigation from which he calculated that this proportion does not exceed 10 per cent. In Best's careful and complete work on "The Blind," published in 1919, the statement is made on page 152 that "but a comparatively small portion of all blindness is to be ascribed to hereditary action." The correct number of persons in the United States blind from hereditary causes is probably nearer 5,000 than the very alarming figure given in the report of the committee. All of us would agree with the committee as to the importance of preventing blindness if possible. I am not sure, however, that a large number would favor additional legislation as suggested.

Clarence E. Ford, Albany, N. Y.
Superintendent, Division of Medical Charities.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will *not* be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CANCER OF THE BREAST

To the Editor.—Mrs. L., aged 31 years, had three children, the youngest aged 18 months. Two weeks before the birth of the youngest child, mastitis developed in the left breast. One week before confinement, the breast was lanced, with the discharge of considerable pus. The breast continued to discharge pus and milk while the baby was nursing, only the sound breast being used. After the child was weaned, the discharge ceased. The patient consulted me for the first time a few days ago. She is four months pregnant. Lately she has had pains in and around the diseased breast. Examination shows it to be larger than the other and nodular. The nodules are fairly firm, but not of stony hardness. One gland, rather soft to the touch, can be felt in the axilla. The right breast appears normal. Should the patient be advised to have the breast amputated? If so, is the operation likely to interrupt pregnancy? If amputation is not done, what is the prognosis and what line of conservative treatment should be followed? Kindly omit my name.

M D , Canada.

Answer.—It is usually more difficult to make a positive diagnosis of malignancy in the female breast during pregnancy, which is all the more reason for the exhibition of greater care.

In the case cited, most physicians would not hesitate to have the breast removed if the signs of carcinoma are present. If the signs are suggestive, an exploratory operation should be made, and the surgeon should be ready to proceed if malignancy is found.

Pregnancy is rarely interrupted by such intervention. It is hard to generalize on such a serious matter and unfair to advise without seeing the patient.

SELF-ADMINISTERED ANESTHESIA IN OBSTETRICS

To the Editor.—Which of the general anesthetics is most commonly used today in uncomplicated obstetric cases attended in the home? I have never used anything and have had no complaints from the patient, but patients talk to one another about their cases, and I am getting demands that either chloroform or ether be used in certain cases. I have always felt that it was unsafe to allow the patient to administer chloroform herself, and if ether was used enough would not be inhaled to cause relief from pain unless I administered it myself, and this I cannot do and keep may hands sterile. (Kindly omit name and address.)

M D , Pennsylvania.

Answer.—The question of anesthesia in the absence of adequate assistance is always a serious problem in obstetrics. This is the result of the general disposition to regard labor as a purely physiologic process, which it rarely is among highly civilized women. They admit this themselves by their constant insistence on anesthesia.

The family should be impressed by the physician with the idea that nothing should be spared in time, money or assistants to make the delivery as safe, easy and painless as possible. The physician and the family should insist that every aid be available for instant use in case of necessity. It would result in the saving of many lives. No one can say when a labor which promises to be easy and natural may not develop the most serious and dangerous complications.

A man [illegible] to try to deliver a woman alone unless comp[illegible] of the family, or a neighbor, should always be at hand, and this person can usually give the anesthetic under medical direction. At present only ether and chloroform allow us to do this without too great risk.

If the woman is delivered on her side with the buttocks at the edge of the bed, the physician can keep his hands clean, watch the perineum and administer the anesthetic from a bottle well covered with aseptic gauze. At the last minute the head can be slipped through before the woman wakes up.

If the delivery is on the back, the woman herself can often aid—with ether. She uses the mask, and the physician pours out the proper amount.

One physician solved the problem by tying together a string and a stout rubber cord, which was fastened to a hook just over the patient's head but so short that she would have to reach for it.

The patient pulled down the saturated mask and inhaled until relaxation occurred and the mask flew out of her hand. When she came to consciousness again she could grasp the mask, which was again wet with chloroform. This method, though crude, is safer in principle than the chloroform holders on the market.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, Sept. 1. Sec., Dr. Harry C. De Vighne, Juneau.

National Board of Medical Examiners: Written examinations in Class A Medical Schools Parts I and II, Sept. 16-18. All applications must be made on or before August 15. Sec., Dr. John S. Rodman, 1600 Walnut St, Philadelphia.

New Hampshire: Concord, Sept. 10-11. Sec., Dr. Charles Duncan, Concord

Oklahoma: Oklahoma City, Sept. 8 9. Sec., Dr. James M. Byrum, Shawnee.

Philippine Islands: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave, Manila.

Porto Rico: San Juan, Sept. 1. Sec., Dr. Diego A. Biascoschea, 3 Allen St., San Juan.

Nevada Reciprocity Report

Dr. Simeon L. Lee, secretary, Nevada Board of Medical Examiners, reports that 7 candidates were licensed by reciprocity from the November, 1924, meeting up to and including June 17, 1925. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1915), (1924)	California
Northwestern University		(1903)	Illinois
University of Michigan Medical School		(1913)	Michigan
Washington University		(1918)	Missouri
University of Oregon		(1924)	Utah
University of Vermont		(1908)	Vermont

Missouri February Examination

Dr. James Stewart, secretary, Missouri State Board of Health, reports the oral, written and practical examination held at St. Louis, Feb. 24-27, 1925. The examination covered 14 subjects and included 102 questions. An average of 70 *per cent. was required to pass. Of the 30* candidates examined, 28 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
Yale University		(1924)	1
Howard University		(1924)	1
Northwestern University		(1893, 1), (1924, 1)	2
State University of Iowa		(1924)	1
University of Kansas		(1924)	1
University of Louisville		(1924)	1
University of Minnesota Medical School		(1924)	1
St. Louis University		(1924, 1), (1925, 8)	9
Washington University		(1924)	4
Columbia University College of Phys. and Surgs.		(1914)	1
Cornell University		(1914, 1), (1922, 1)	2
University of Pennsylvania		(1924)	1
Meharry Medical College		(1923, 1), (1924, 1)	2
University of Vermont		(1924)	1

College	FAILED	Year Grad.	Number Failed
Eclectic Medical College		(1910)	1
University of West Tennessee		(1914)	1

Book Notices

Pediatrics. By various authors. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School. Volume VI. Cloth. Price, $10. Pp. 736, with 150 illustrations. Philadelphia: W. B. Saunders Company, 1925.

Pediatrics. Volume VII. By various authors. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School. Cloth. Price, $10. Pp. 879, with 70 illustrations. Philadelphia: W. B. Saunders Company, 1925.

Volumes of this monumental attempt at a complete statement of our present knowledge of the diseases of children continue to appear; the series will probably be completed during this year with the eighth volume and the general index. Because of the vast scope of the work, the early issuing of the general index is desirable, as material on any single topic may appear in several of the volumes. The physician who uses the work for reference will desire to avail himself of all the data.

Volume VI contains notable essays on several topics, including a brief discussion of the regulation of the body temperature by Dr. F. B. Talbot, of diphtheria by Dr. William H. Park, of whooping cough by Dr. A. Friedlander, of scarlet fever by Dr. George H. Weaver, of anesthesia by Drs. Isabella C. Herb, Frederick G. Dyas and F. H. McMechan, and of the surgery of childhood by Dr. Dean Lewis. It is apparent that the editor has selected his contributors on the basis of their recent contributions to scientific literature in the fields with which they are concerned. In his discussion of whooping cough, Dr. Friedlander finds the vaccine of prophylactic as well as therapeutic value, and he cites briefly the literature on which his opinion is based. The section on scarlet fever by Dr. Weaver is remarkable not only for its completeness but also for his personal contributions based on an extensive experience. Unfortunately, the section on etiology appears to have been written previous to the recent work by the Dicks, Dochez, Blake and others, so that their contributions to etiology are included in an added section, with a supplementary list of bibliographic references to the literature of 1924. It would, of course, have been better to revise the original manuscript to include that material in its proper place. The added note is not properly indicated as such, but is included under the heading, "specific therapy."

Volume VII is devoted to the nervous system, including surgery of the head and spine, as well as the psychologic aspects of child life. Of especial interest is the article on chorea by Dr. Theodore C. Hempelmann, excellently developed from an historical point of view and very practical with its complete discussion of therapy. One would expect to find also in this section of the book the special discussion of epidemic encephalitis as it affects the child, but the only reference to it in this volume is the differentiation from tuberculous meningitis. The subject of epilepsy is considered by Dr. George B. Hassin according to classical form, at least a full page being devoted to the use of bromids, and some four lines to the use of phenobarbital (luminal), although the latter substance would seem to merit a little more discussion in the present stage of our experience. Without a doubt, three of the most valuable sections of this book are those on the psychopathology of childhood by Dr. Bernard Glueck, who has been a leader in the field, on the defects of speech by Dr. Elmer L. Kenyon, and on the sexual life of the child by Dr. Smith Ely Jelliffe.

Emphysem und Emphysemherz. Klinik und Therapie. Von Prof. Dr. Nikolaus Jagić und Dr. Gustav Spengler. Abhandlungen aus dem Gesamtgebiet der Medizin. Herausgegeben von Prof. Dr. Josef Kyrle und Dr. Theodor Hryntschak. Paper. Price, 35 cents. Pp. 42. Vienna: Julius Springer, 1924.

This is a very good compilation of the main facts concerning emphysema. The heart condition attending emphysema, too often overlooked or misunderstood by the practitioner, is given its due place of prominence. There is little that is new in the work, though the authors lay stress on certain views that they have for some time held as to the prominent part played by bronchospasm in the production and in the clinical manifestations of the disease. This feature, with the discussion of the value of epinephrin when the bronchospastic phenomena are evident, and digitalis when heart weakness is threatening, add something of an element of freshness to what might otherwise be merely a repetition, though in good form, of the already well known facts concerning emphysema.

Common Infections of the Female Urethra and Cervix. By Frank Kidd, M.A., M.Ch., F.R.C.S., and A. Malcolm Simpson, B.A, M.B., D.P.H. With additional chapters by George T. Western, M.D, and M. S. Mayou, F.R.C.S. Cloth. Price, $2.50. Pp. 191, with 10 illustrations. New York: Oxford University Press, 1924.

This is the result of research work extending over a period of five years. The cases in the venereal clinic at the London Hospital have been analyzed, and the results included in the text. The authors show that comparatively simple methods, methods almost within the scope of the general practitioner, have resulted in complete cures in a large number of cases of female gonorrhea. The authors place considerable faith in the use of flavine. In fact, they use it as a routine almost to the exclusion of other medication. Considerable stress is placed on rest in bed. The authors attribute the frequency of salpingitis to lack of rest in bed. They advocate very active treatment to the cervix in all cases (even in pregnancy) of acute gonorrhea. They feel that ascending infections ar thus prevented. Diathermy is reserved for cases that resis the medical treatment. The book is well written, the onl criticism being that the authors repeat themselves occasionally. The advice contained is generally sound.

Anaphylaxis and Sensitization. With Special Reference to th Skin and Its Diseases. By R. Cranston Low, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh University. Cloth. Price, $6.50. Pp. 384, with 23 illustrations. New York: William Wood & Company, 1925.

This volume contains a thesis for the M.D. degree of the University of Edinburgh. The aim is to consider the relations of sensitization to the skin and its diseases. The first two chapters contain a succinct account on conventional lines of the main facts and hypotheses concerning sensitization, with a particular reference to its manifestation in man. Then follow thirteen chapters in which various cutaneous diseases are considered from the point of view of sensitization. The last chapter deals with the methods and means of desensitization. There is an exhaustive bibliography, but it is not well arranged for ready reference. The colored plates are good. The book has a definite value, particularly for the dermatologist who is interested in the part played by sensitization in diseases of the skin.

Die ortliche Betäubung, ihre wissenschaftlichen Grundlagen und praktische Anwendung. Ein Hand, und Lehrbuch. Von Prof. Dr. Heinrich Braun, Geh. Medizinalrat, Direktor des Krankenstiftes in Zwickau. Seventh edition. Cloth. Price, 22.50 renten marks. Pp. 511, with 212 illustrations. Leipsic: Johann Ambrosius Barth, 1925.

The seventh edition of this well known work shows few changes from the sixth edition, which appeared in 1921. Most of the changes relate to paravertebral anesthesia. This method of blocking the upper cervical nerves is condemned on account of the danger of the needle's entering the spinal canal. In the abdominal region, the anterior method of blocking the solar plexus is preferred to the posterior method. Aside from these few changes, this edition is practically the same as the sixth.

Clinical Physiology. By Louis E. Bisch, M.D., Ph.D. Cloth. Price, $3. Pp. 346, with illustrations. Baltimore: Williams & Wilkins Company, 1925.

This book is based on a series of lectures to students at Teachers College and in the extension courses at Columbia University. The case studies are derived from Dr. Schlapp's clinic at the New York Post-Graduate Medical School and Hospital. The latter take up 116 pages and are largely devoted to a detailed citation of responses to Binet-Simon tests. There is no clue, therefore, to the diagnosis given, and the erroneous inference is allowed that it might be derived from the data presented. The author leans entirely too heavily on intelligence tests and the general subject of feeblemindedness for the bulk of his material on clinical psychology. Photographs of no diagnostic significance are presented of psychoneurosis, dementia praecox, congenital precocity and hystero-epilepsy. Throughout this volume one fears that school teachers will be impelled on the basis of such meager accounts of epilepsy and congenital syphilis as are presented in Chapters XII and XIII to attempt to diagnose these conditions. As long as the purpose of the writer, as he expresses it, is maintained there should be no trouble: "Acquaint yourselves with the cardinal signs of mental defect; be on the alert to recognize them when present; then take the child to the proper place for a complete examination and follow the advice given." For the recognition of these signs the book may be recommended, but as a "guide for the recognition, diagnosis, treatment and disposition of the atypical child," as advertised on the cover, the book falls short.

Miscellany

THE DISTRIBUTION OF LEPROSY

Equatorial Africa has a higher incidence of leprosy than any other region in the world. According to Rogers and Muir (Leprosy, New York, William Wood & Co., 1925), the rate is 130 per thousand population in the Ebolawa district, 60.7 on the French Ivory Coast, and 20 in the Cameroons and Abyssinia. Since leprosy was certainly introduced into Europe from Africa, the conquest of Egypt by Xerxes, who is said to have led 6,000,000 people into Europe from Africa and Asia, would account for its introduction into Greece. Italy probably became affected with the return of Pompey's soldiers in 62 B. C. Galen, in 180 A. D., wrote of leprosy in Germany, where, according to Virchow, four centuries later there were 636 leper houses established in Verdun, Maestricht and Italy. Long before the crusades, practically all parts of Europe were affected, but at that period leprosy became alarming. There were 2,000 leper houses in France alone in 1229. America was discovered about the time that leprosy was widespread in Europe, and there is evidence that the earliest immigrants from Portugal and Spain carried leprosy with them. Montaya states, say Rogers and Muir, that the first cases in Colombia were all in Spaniards as early as 1543. The African slave trade was a more important factor, however, in spreading leprosy in the Western Hemisphere, 1,300,000 slaves having been carried to Central America by the end of the sixteenth century. The first known cases in what is now the United States occurred in Louisiana in 1758; the next authentic cases occurred in 1866 in French immigrants, and the disease has continued in Louisiana from that time until the present.

On account of the enormous population, China is one of the most important leper areas in the world. The total number of cases in China was estimated by von Vloten at 1,000,000. Japan, in 1912, had more than 102,000 lepers, and the 1921 census enumerated about the same number in India, where, had early cases been included, the total number probably would have been doubled. Startling outbreaks occurred late in the nineteenth century in certain islands in the Pacific; the most important was in Hawaii, where leprosy was probably introduced by Chinese immigrants in 1848. The next serious outbreak was in New Caledonia, where it was also due to a Chinese; in ten years, from one fourth to one half of the population in some places were attacked. The epidemic spread next to the Loyalty Islands, where the first case was reported in a Chinese in 1878. Thompson is said to have obtained no history of leprosy in the aboriginal Australians, although a few cases occurred where they came in contact with the Chinese and Malays. Australia still has very litte leprosy except in Queensland and New South Wales; Greenland, in 1900, was reported free, but a few Greenland lepers have since been found. Norway and Sweden became affected in the middle ages, and foci have persisted until today, although the number of cases in late years has gradually decreased. On the Pacific Coast of the United States, leprosy has been confined largely to Chinese immigrants, most of whom have been returned to China. A number of imported lepers have been found in our large Eastern cities, but there has been little tendency on either coast to originate new infections. Some years ago, Hanson reported that of about 160 lepers known to have emigrated to Minnesota, Wisconsin and Iowa, all but about seventeen had died at the time of his visit without giving rise to any known new cases. Since Hanson's inquiry, however, Brinckerhoff has reported that leprosy is endemic in Minnesota, a few cases having developed in persons born there. There is a persistent focus in some districts of New Brunswick, Canada, which dates back to 1815, and a few cases have been found in Chinese immigrants in British Columbia in western Canada. Chinese immigrants seem to have been an important factor in the spread of leprosy, Jeanselme reporting in 1902 that they carried leprosy to Java, Sumatra, Borneo, the Philippines, Indo-China, Siam, the Straits Settlements and other East Indian islands.

The most striking fact indicated by Rogers and Muir's carefully prepared leprosy map is that every country with a high leprosy incidence (from 5 to 60 per thousand population) is within the tropics, and practically all of them have a high rainfall. They say that leprosy is nearly or completely absent from those parts of the tropics in which the rainfall is less than 10 inches.

As Rogers and Muir conclude, leprosy probably originated in the northern belt of Central Africa, whence it spread to Egypt and from there possibly all over the world. Warfare and emigration seem to have been the chief means to that end.

INFANT MORTALITY IN CITIES OF THE UNITED STATES

The sixth annual statistical report of infant mortality in cities of more than 10,000 population has been issued by the American Child Health Association. The report covers the infant death rates in 667 cities of the United States during 1924. The data analyzed are obtained from the United States Bureau of the Census for 515 cities with populations of 10,000 or more (according to the 1920 census) in the birth and death registration areas, 114 cities in the birth registration area and 38 cities outside these areas. Tables and a large chart show the crude rates for each of these 667 cities, and adjusted rates for cities of New Jersey, which is the only state that assigns births and deaths to the place of residence. This correction, in certain cases, makes a notable difference in the relative position of cities. The lowest crude death rate of the 629 cities in the birth registration area is 25 for New Philadelphia, Ohio. The highest figure is 153 for Charleston, S. C. Of the cities with more than 250,000 inhabitants, the highest rate is reported for Pittsburgh, 92, and the lowest rate for Seattle, 45. The computation according to states shows the lowest urban rates for Oregon, Washington and Minnesota and the highest rates for Southern states, where the racial factor is of considerable moment. The errors due to incomplete reporting of births and other influences that should be taken into account in evaluating mortality rates are pointed out in this report.

WORKING WOMEN IN THE UNITED STATES

According to the Department of Labor, 8,500,000 women in the United States earn their own living and in many instances contribute to the support of their families. From the investigations of the Women's Bureau and a study of census statistics, it appears that one in every five working women is less than 20 years of age and more than one in every five is between 20 and 24 years of age; another two fifths of the women who work are between 25 and 44 years of age. While nearly one in every three men who work is more than 44 years of age, only one in six women who work is more than that age. More women are employed in domestic service than in any other group of occupations. There are 2,000,000 married women at work, one half of whom are native white. South Carolina has the greatest proportion of its women at work, more than one third, and West Virginia the smallest proportion, about one ninth.

Medicolegal

Harrison Narcotic Law and the Practice of Medicine

(Linder v. United States (U. S.), 45 Sup. Ct. Rep. 446)

The Supreme Court of the United States, in reversing a judgment which affirmed a conviction of defendant Linder of violating the Harrison Narcotic Law and in remanding the cause for further proceedings, says that, in effect, the indictment alleged that the accused, a duly registered physician, violated the statute by giving to a known addict four tablets containing morphin and cocain with the expectation that she would administer them to herself in divided doses, while unrestrained and beyond his presence or control, for the sole purpose of relieving conditions incident to addiction and keeping herself comfortable. The indictment did not question the physician's good faith, nor the wisdom or propriety of his action according to medical standards. It did not allege that he dispensed the drugs otherwise than to a patient in the course of his professional practice or for other than medical purposes. The facts disclosed indicated no conscious design to violate the law, no cause to suspect that the recipient intended to sell or otherwise dispose of the drugs, and no real probability that she would not consume them.

The declared object of the narcotic law is to provide revenue, and this court has held that whatever additional moral end it may have in view must "be reached only through a revenue measure and within the limits of a revenue measure." Congress cannot, under the pretext of executing delegated power, pass laws for the accomplishment of objects not entrusted to the federal government. Obviously, direct control of medical practice in the state is beyond the power of the federal government. Incidental regulation of such practice by Congress through a taxing act cannot extend to matters plainly inappropriate and unnecessary to reasonable enforcement of a revenue measure. The enactment under consideration levies a tax, upheld by this court, on every person who imports, manufactures, produces, compounds, sells, deals in, dispenses or gives away opium or coca leaves or derivatives therefrom, and may regulate medical practice in the states only so far as reasonably appropriate for or merely incidental to its enforcement. It says nothing of "addicts" and does not undertake to prescribe methods for their medical treatment. They are diseased and proper subjects for such treatment, and this court cannot possibly conclude that a physician acted improperly or unwisely or for other than medical purposes solely because he has dispensed to one of them in the ordinary course, and in good faith, four small tablets of morphin or cocain for relief of conditions incident to addiction. What constitutes bona fide medical practice must be determined on consideration of evidence and attending circumstances. Mere pretense of such practice, of course, cannot legalize forbidden sales, or otherwise nullify valid provisions of the statute, or defeat such regulations as may be fairly appropriate to its enforcement within the proper limitations of a revenue measure.

The opinion in *United States v. Behrman*, 257 U. S. 280, 287, 42 S. Ct. 303, cannot be accepted as authority for holding that a physician, who acts bona fide and according to fair medical standards, may never give an addict moderate amounts of drugs for self-administration in order to relieve conditions incident to addiction. Enforcement of the tax demands no such drastic rule, and if the act had such scope it would certainly encounter grave constitutional difficulties.

The narcotic law is essentially a revenue measure, and its provisions must be reasonably applied with the primary view of enforcing the special tax. This court finds no facts alleged in the indictment sufficient to show that the accused had done anything falling within definite inhibitions or sufficient materially to imperil orderly collection of revenue from sales. Federal power is delegated, and its prescribed limits must not be transcended even though the end seems desirable. The unfortunate condition of the recipient certainly created no reasonable probability that she would sell or otherwise dispose of the few tablets entrusted to her; and this court cannot say that by so dispensing them the physician necessarily transcended the limits of that professional conduct with which Congress never intended to interfere.

Physician Not Responsible for Burning of Patient

(Olson v. Bolstad (Minn.), 201 N. W. R. 918)

The Supreme Court of Minnesota says that the defendant physician attended the plaintiff in childbirth at her home. The child was safely delivered, and he left. Three hours later, the plaintiff, who was being cared for by her mother and by her husband and by a licensed midwife of twelve years' experience as a midwife, went into convulsions and the defendant was again called. On seeing her condition, he said: "Get all the hot water bottles and hot flatirons you possibly can and put on her at once—get her warmed up." The husband procured four flatirons, which the midwife heated, wrapped up, and placed about the plaintiff's person. The plaintiff was unconscious. The defendant, after administering a hypodermic and giving her some further treatment, called an ambulance and directed that she be taken to the hospital. He left before the ambulance came, but met them at the hospital, where they arrived at about 11 p. m. Some hours later the plaintiff regained consciousness. The next morning it was found that she had been badly burned on the right breast and left leg. The evidence would permit a jury to find that two of the flatirons had become unwrapped and caused the burning. The question presented in this action for malpractice was whether the defendant was chargeable with negligence for failing to guard against the happening of such an accident. It was conceded that he, although present, took no part in preparing, wrapping or placing the hot irons. His negligence, if any, consisted in the fact that he gave no attention to them after they were wrapped and placed about his patient by the midwife; that he did not look to see whether any of them had become unwrapped or were likely to cause burns. Wrapping the irons so they would not burn and so the wrappings would remain in place required no professional skill. The midwife or any person of common intelligence and experience was competent to do it. The court thinks that it could not be said that the defendant was guilty of negligence in trusting the midwife to perform that service and in relying on her to perform it properly. As the fact that he made no examination to see whether the irons were, and remained, properly wrapped was the only respect in which it was claimed that he was derelict, the court thinks that the trial court reached the correct conclusion when it, at the close of the plaintiff's case, dismissed the action on the ground that the evidence failed to show negligence on the part of the defendant; and therefore that courts order denying the plaintiff's motion for a new trial is affirmed.

Society Proceedings

COMING MEETINGS

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., Sept. 16-18. Dr. James E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Electrotherapeutic Association, Chicago, Sept 15-17. Dr. Richard Kovacs, 223 East 68th Street, New York, Secretary.

American Roentgen Ray Society, Washington, D C., Sept. 22-25. Dr Charles L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

Idaho State Medical Association, Pocatello, Sept. 10-12. Dr. J. N. Davis, Kimberly, Secretary

Indiana State Medical Association, Marion, Sept. 23-25. Mr. T. A. Hendricks, Hume Mansur Building, Indianapolis, Executive Secretary

Mississippi Valley Conference on Tuberculosis, Lansing, Mich., Sept. 15-17. Dr. T. J. Werle, 209 W. Shiawassee Street, Lansing, Mich., Executive Secretary.

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Oregon State Medical Society, Medford, Sept. 2-4. Dr. C. L. Booth, 1021 Selling Bldg., Portland, Secretary.

Utah State Medical Association, Salt Lake City, Sept. 7-12. Dr. William L. Rich, Boston Building, Salt Lake City, Secretary

Washington State Medical Association, Seattle, Sept. 17-18. Dr. C. H. Thomson, Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 16-18. Mr. J. G. Crownhart, 558 Jefferson Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal for a period of three days No foreign journals are available prior to 1920, nor domestic prior to 1923 Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested)

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

169: 781 936 (June) 1925

Effect of Premature Dogmatization in Medical Sciences W. H Manwaring, Standford University, Calif —p 781
*Is Our Knowledge of Pneumonia Sufficient to Explain Its Endemicity and Occasional Epidemicity? A C Abbott, Philadelphia —p 784.
*Simulation of Acute Respiratory Diseases by Secondary Lung Tumors L F Craver, New York —p 792
*Ciliary Inhibition or Destruction in Tracheobronchial Asthma; Bronchoscopic Treatment W F Moore, Philadelphia —p 799
*Chronic Mediastinitis L C Knox, New York —p 897
*Primary Tuberculous Pericarditis W. B Rawls, New York.—p. 815.
*Lymphatic Leukemia in Infancy, Case M Wollstein and F H. Bartlett, New York —p 819
*Sole Prints of New Born Babies R B Montgomery, Madison, Wis —p 830
*Influence of Gallbladder on Intestinal Motility B M Bernstein, Brooklyn —p 838
*Experimental Studies on Color of Bile from Gallbladder and Liver A Winkelstein and P W Aschner, New York —p 842.
*An Estimation of Clinical Value of van den Bergh Test. E. G Ravdin, Philadelphia —p 850
Thyroxin and Tryptophane Content of Diseased Thyroid Gland; Iodin Compounds in Desiccated Thyroid J F Weir, Rochester, Minn —p 860
*Use of Lipiodal in Localization of Spinal Lesions F G Ebaugh, Philadelphia —p 865
*An Instrument Utilizable for Various Operations, Blood Transfusion, Hypodermoclysis, Intravenous Infusion, Phlebotomy and Withdrawal of Fluids from Body Cavities H M Feinblatt, Brooklyn —p 870
*Three Cases of Bullet Wounds of Heart Showing Attempts at Healing B M Vance, New York —p 872
*Heart Block Caused by Gumma of Septum Two Cases N E Clarke and F J Smith, Detroit —p 882
*Obstructive Jaundice E S Judd and V G Burden, Rochester, Minn —p 888

Epidemiology of Pneumonia.—In Abbott's opinion the evidence does not justify the belief that the endemicity and occasional epidemicity of pneumonia are due to the simple transference of one or another of the types of pneumococcus from the sick to the well The fact that recovery from pneumonia confers no appreciable immunity from subsequent invasions by the homologous type of pneumococcus (or by other types) justifies a question as to the etiologic relationship of that organism to pneumonia The occurrence of pneumonia as a result of the activities of diverse organisms suggests the possibility that the lesions of the lungs are but secondary to an antecedent general or local condition brought about by some other as yet unidentified organism. If the pulmonary lesions may be regarded as secondary developments, may not the spread of the disease be explained by the existence of some, as yet unknown, predisposing agent; and may not invasion and transmission occur before the disease is recognizable as pneumonia? This would explain the persistent, ubiquitous, high rate of morbidity as well as the occasional epidemic explosions.

Secondary Lung Tumors.—Craven reports three cases of secondary lung tumors In the first case the primary tumor was a periosteal osteogenic sarcoma of the lower end of the right femur; in the second case, the lung metastases were secondary to a cancer of the lip, and in the third case to a carcinoma of the cervix Craven calls attention to the difficulty of making an early diagnosis in these cases because the onset may simulate any form of lung disease.

Bronchoscopic Treatment of Asthma.—Moore presents results of bronchoscopic, histologic and bacteriologic studies in a series of twenty-seven cases of tracheobronchial asthma. The speedy relief afforded the great majority of patients has led Moore to believe that bronchoscopy alone, affording as it does a means of cleansing the overloaded mucous membrane of the tracheobronchial tree, temporarily alleviates the symptoms and yields relatively permanent results in many cases. This would seem to justify the conclusion that defective ciliary drainage is a factor of the utmost importance.

Chronic Mediastinitis.—A case of chronic mediastinitis, which caused the death of the patient, is cited by Knox in which syphilis is believed to have been the etiologic factor. The lesion was a dense hyaline connective tissue mass, with granulomatous areas, sclerosing and constricting blood vessels, nerves and large bronchi. The infiltration and productive inflammation closely simulated in extent and effect a malignant tumor.

Primary Tuberculous Pericarditis.—The case cited by Rawls was considered as one of primary tuberculuos pericarditis; that is, it was proved to be primary, as no other focus of tuberculosis was found after careful search. The diagnosis was based on the chronicity, the presence of a relatively large sterile effusion, guinea-pig injection and necropsy findings

Lymphatic Leukemia in Infant.—A case of acute lymphatic leukemia in a female infant, aged 14 months, is recorded in clinical and anatomic detail by Wollstein and Bartlett. Macroscopic and microscopic leukemic nodules were found in the liver and kidney, while the spleen and lymph nodes showed diffuse infiltration with lymphocytes.

Sole Prints of New-Born Babies.—Montgomery describes a new method of taking finger, palm and sole prints of babies which was devised by J H Mathews and is said to be far superior to the old ink method. The details of the process have not yet been made public, but will be in the near future.

Influence of Gallbladder on Intestinal Motility.—According to Bernstein there is a substance secreted from the gallbladder which is of hormonal type and an activator. It has a regulatory effect on intestinal motility. Its absence produces an imbalance in the normal correlated action of the circular and longitudinal muscle fibers of the intestinal tract. Bernstein suggests, as a theoretic possibility; that the permanent or even temporary absence of this substance in the gallbladder may be the exciting cause for the production of the primary cholesterin calculus, in permitting a precipitation of the cholesterin in the bile, where it may be held in solution by the presence of this substance.

Color of Bile.—By means of cannulas placed in the biliary ducts Winkelstein and Aschner were able to observe the appearance of bile from the dog's liver alone and from the gallbladder and liver together. Bile in the common duct of fasting dogs under the experimental conditions was dark greenish-brown in color and almost tarry in consistency, when the gallbladder was in situ. Bile obtained directly from the liver was a light yellow color whether the dog was feeding or fasting Exceptionally it was of a medium brown color in the first twenty-four hours after operation After cholecystectomy the bile from the common duct was light yellow and thin in consistency whether the dog was feeding or fasting The instillation of 25 per cent. magnesium sulphate solution into the duodenum was not followed by an change in the color of the bile from the common duct either before or after cholecystectomy, under these experimental conditions

Clinical Value of van den Bergh Test.—The test of van den Bergh for the estimation of the type and quantity of bilirubin found in the blood serum is discussed by Ravdin as is also his interpretation of the test and the theories on which he bases his interpretation. Whether van den Bergh's theory of jaundice is accepted or not, the test and his interpretation of it are in accord with the clinical findings in a series of more than 100 cases In fourteen cases of occlusion of the common duct by stone, tumor or pancreatic disease, a strong immediate direct reaction was obtained. Serum from nine patients with chronic cholecystitis gave only the delayed or negative direct reaction, and the indirect reaction gave a value above normal in only one case. Eleven cases of chronic calculous cholecystitis gave negative or delayed direct reactions, with indirect readings from 0.2 to 1.9 units. In fourteen cases of secondary anemia, the indirect result was always within the normal range. In fourteen cases of pernicious anemia, the bilirubin in the serum was high—from 07 to 4 units in eleven cases; 0.6, or high normal, in two cases; well within normal limits, 0.4, in one case. Four cases of hemolytic ictero-anemia showed a greatly increased amount of bilirubin of the hemolytic type, in the serum, from 1.5 to 4 units. In three cases of leukemia and one case of purpura hemorrhagica low normal values were obtained.

Use of Lipiodal to Locate Spinal Cord Block.—According to Ebaugh the intracistern injection of lipiodal (lipiodol?), with accompanying roentgenographic studies, is of definite value for the accurate localization of spinal cord block. In spinal cord tumor the use of lipiodal should lead to earlier operation and its use may be further indicated to be of value in acute inflammatory conditions, such as may arise in the treatment of, or following epidemic meningitis (subarachnoid spinal block). There were no marked subjective reactions experienced in the use of lipiodal. It is logical that lipiodal should always be injected into the cisterna magna since it gravitates and seeks the lowest level and thereby localizes at any site of obstruction.

New Apparatus for Transfusion.—An apparatus is described by Feinblatt which can conveniently be adapted to various therapeutic and diagnostic procedures, namely, blood transfusion, hypodermoclysis, intravenous infusion, phlebotomy and the removal of fluid from the body cavities. It has also been successfully employed for the induction of artificial pneumothorax in animals.

Traumatic Heart Wounds Heal.—The three cases presented by Vance are of value in that they suggest conditions under which healing can take place in the heart wall. In one case a 32 caliber bullet without penetrating the heart cavity cut a tunnel in a segment of the heart muscle that was not duly vascular. There was practically no hemorrhage into the pericardial cavity and death seemed to be due to a spinal cord lesion and lobar pneumonia. In the second case the heart and aorta were perforated by a small 25 caliber bullet in such a manner that bleeding was slight at the start, the patient experiencing no trouble from his cardiac injury until eight days afterward, when the edges of the wound were suddenly forced apart and death resulted from sudden hemorrhage in the pericardium. In the third case, the remarkable feature was the encapsulation of the bullet in the right ventricle with healed scars of the right auricle and the right lung, demonstrating the manner in which the bullet had reached its final resting place many years before. Death in this case was due to a recent injury which had no connection with the old bullet wound. In all three cases the bullets left wounds in the heart of such a nature that the primary complications were avoided and conditions were favorable for the process of repair.

Gumma Causes Heart Block.—A case of heart block due to gumma of the ventricular septum is reported by Clarke and Smith. The diagnosis of gumma was conclusively proved by the demonstration of *Spirochaeta pallida* in the ventricular tissues. The possibility of gallbladder infection as a primary or accessory cause of heart block is discussed, and a case illustrating this possibility is presented in which the heart regained and has maintained normal sinus rhythm since the removal of the infected gallbladder.

Postoperative Obstructive Jaundice.—A case of postoperative obstructive jaundice is reported by Judd and Burden. Significant laboratory studies were made of the blood before and after operation. There was no evidence of recurrence more than two and a half years after removal of a cancer of the gallbladder. A method is described of decompression of the liver by multiple needle punctures into the liver parenchyma.

American Journal of Physiology, Baltimore

123: 1-274 (June) 1925

Effect of Secretin and Pilocarpin on Blood Lipase of Dogs. P. V. Prewitt, New York.—p. 1.

*Physiology of Reproduction in Birds. XX. Reciprocal Size Changes of Gonads and Thyroids in Relation to Season and Ovulation Rate. O. Riddle, Cold Spring Harbor, N. Y.—p. 5.

Frequency of Motor Nerve Impulses in Crossed Extension Reflex as Shown by Alcohol Block Method. A. Forbes and J. M. D. Olmstead, Boston.—p. 17.

Relation Between Night Blindness and Malnutrition. Influence of Deficiency of Fat Soluble A Vitamin in Diet on Visual Purple in Eyes. L. S. Fridericia and E. Holm, Copenhagen, Denmark.—p. 62.

Demonstration of Hemeralopia in Rats Nourished on Food Devoid of Fat-Soluble-A-Vitamin. E. Holm, Copenhagen, Denmark.—p. 79.

Passage of Water Through Skin of Frog, and Relation Between Diffusion and Permeability. E. F. Adolph, Baltimore.—p. 85.

*Physiology of Vitamins. III. Relation Between Vitamin B and Appetite. G. R. Cowgill, H. J. Deuel, Jr., and A. H. Smith, New Haven, Conn. —p. 106.

*Comparison of Gaseous Content of Blood from Veins of Forearm and Dorsal Surface of Hand as Indicative of Blood Flow and Metabolic Differences in These Parts. S. Goldschmidt and A. B. Light, Philadelphia.—p. 127.

Effect of Local Temperature on Peripheral Circulation and Metabolism of Tissues as Revealed by Gaseous Content of Venous Blood. S. Goldschmidt and A. B. Light, Philadelphia.—p. 146.

*Cyanosis Unrelated to Oxygen Unsaturation, Produced by Increased Peripheral Venous Pressure. S. Goldschmidt and A. B. Light, Philadelphia.—p. 173.

Circulation and Its Measurement. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 193.

Effect of Ether on Pressor Response to Epinephrin in Pithed Cats. L. C. Wyman and B. R. Lutz, Boston.—p. 254.

Effect of Low Blood Pressure and Ether Anesthesia on Blood Alkali. B. R. Lutz and L. C. Wyman, Boston.—p. 264.

Seasonal Changes in Thyroid, Testes and Ovaries.—Data are given by Riddle showing coincident seasonal changes in the weight of thyroids, testes and ovaries of three kinds of pigeons. The seasons (autumn and winter) of increased thyroid size are seasons of diminished size of testis and ovary. The seasons (spring and summer) of decreased thyroid size are seasons of increased size of testis and ovary. The seasons of free or frequent ovulation coincide with periods of decreased thyroid size and of increased gonad size. The period of restricted ovulation—and of numerous clutches composed of single eggs—coincides with the period of enlargement in the thyroid.

Relation Between Vitamin B and Appetite.—A yeast vitamin concentrate and a wheat embryo preparation containing vitamin B were tested by Cowgill, Deuel and Smith for their appetite-promoting power on dogs fed an artificial food mixture adequate for maintenance, except with respect to vitamin B. Trials with single large doses gave results indicating that a relationship exists between the amount of the vitamin-containing material, the size of the animal in terms of the body weight, and the number of days over which the appetite is completely restored. Evidence was obtained that maintenance of the desire to eat over a period of two months is not complete proof that the dog's vitamin B requirement is being entirely satisfied. Control experiments with commercial beef extract, which does not contain vitamin B, but does promote the flow of gastric juice, showed that this substance does not restore the desire to eat in animals suffering from vitamin B deficiency. From these experiments it may be concluded also that vitamin B does not owe its restorative effect on the appetite, as might be supposed, to any increased flow of gastric juice which it may produce.

Oxygen Saturation of Hemoglobin.—Goldschmidt and Light found that the oxygen saturation of the hemoglobin of the blood from veins on the dorsal surface of the hand or wrist is higher, and the carbon dioxid content lower, than that of blood taken from veins of the forearm in the antecubital fossa. Hypotheses which account for the necessity for a rapid circulation of blood through the hand, and speculations upon the mechanism of accomplishment are presented.

Cyanosis Unrelated to Oxygen Unsaturation.—Evidence is presented by Goldschmidt and Light which shows that when the arm is allowed to hang down and kept stationary the resulting engorgement of the capillaries and the venules of the hand may be a primary cause of blueness of the skin in the absence of an increased oxygen unsaturation of the blood in these vessels. The suggestion is presented that at a given oxygen unsaturation of the blood, the color transmitted to the skin will depend on the ratio between the extent of the capillary and the venule dilatation. On the basis of this conception may be reconciled the observation that, at approximately the same degree of blood oxygen unsaturation, the skin is pink when exposed to mild heat or extreme cold while it is blue when the arm is hung down. The blueness of cold and the rose-red or purple of heat are also discussed.

American Review of Tuberculosis, Baltimore

11: *275-374* (June) 1925

*Tuberculosis in Children. G. J. Drolet, New York.—p. 292.
*Human Resistance to *Tuberculosis* at Various Ages of Life. A. K. Krause, Baltimore.—p. 303.
*Experimental Study of Comparative Resistance of Young and Old Guinea-Pigs to Tuberculosis. A. K. Krause, Baltimore.—p. 355.

Tuberculosis in Children.—Drolet shows that during the last twenty-six years in New York City 28,762 deaths from various forms of tuberculosis have been reported among children under 15 years of age. In 1898, 1,370 such deaths were registered among a total childhood population estimated at 1,002,767. In 1923, with a child population increased by more than 675,000 (to 1,679,252), the tuberculosis deaths numbered only 547. The former death rate of 136 per hundred thousand was reduced to 33, or by 76 per cent. In children under 15 tuberculous meningitis causes one half of the deaths. The death rate from this cause in children in New York City has been reduced from 78 to 17 per hundred thousand, or by 78 per cent., between 1898 and 1913. In this group of children pulmonary tuberculosis is the next important type after the meningeal form, and nearly one third of all of the tuberculosis deaths among children were of that form; but the death rate, which formerly was 31, had been reduced to 10, or by 68 per cent. Pulmonary tuberculosis in children, though it has also greatly declined in New York, has not been reduced quite as fast as the other forms. The abdominal type of tuberculosis in children under 15 in New York City, though causing a large proportion of the deaths, shows the greatest decline. Until recently the death rate from tuberculous peritonitis frequently reached 7 and 8 per hundred thousand, whereas in the last couple of years it has gone down to one. Drolet is convinced that the measures which the health authorities of New York City have adopted, first, complete pasteurization of all milk, except the certified, and second, the annual examination of almost 100,000 food handlers, must be given the greater share of credit in the gains against this form of tuberculosis, largely due to infection from food supplies.

Resistance to Tuberculosis at Various Ages.—Krause closes this detailed study with these words: If susceptible mankind are natively more or less resistant to tuberculosis according as they are older or younger, then other susceptible species should, under the proper conditions, exhibit the same variations in degrees that are marked enough to be detectable. And the most enlightening commentary on the whole matter is that experiments have thus far either failed to disclose significant differences according to age or have resulted equivocally.

Comparative Resistance of Old and Young Animals to Tuberculosis.—The experiments reported on by Krause show that when young and old guinea-pigs are infected intracutaneously with relatively small quantities of virulent tubercle bacilli that are equal for all the animals, there is an earlier appearance and more vigorous development of tubercle at the site of inoculation and in the regional lymph nodes in the old animals. After infection of this nature and heavy enough to cause generalized tuberculosis in the old animals, both young and old guinea-pigs developed essentially the same grade of infection. There was nothing to indicate that the young were more susceptible than the old. When injected subcutaneously with large quantities of virulent tubercle bacilli in equal dosage, a more extensive and progressive involvement resulted in the young than in the old. Since under these circumstances the young received, per body weight, double the quantity of tubercle bacilli that was sufficient to cause progressive and fatal tuberculosis in the old, it is likely that the more advanced infection of the young was the result of "overdosage.

Annals of Surgery, Philadelphia

81: 1053-1222 (June) 1925

Method for Exposing Anterior Portion of Frontal Lobes of Brain. E. Sachs, St. Louis.—p. 1053.
*Diagnosis and Surgical Treatment of Tumors of Spinal Cord. End Results in 119 Operations. C. A. Elsberg, New York.—p. 1057.
*Bone Tumors; Analysis of One Thousand Cases. F. C. Christensen, Racine, Wis.—p. 1074.
Plexiform Neuroma of Arm; Case. M. F. Mullen, Pocatello, Idaho.—p. 1093.
*Final Results of Operative Treatment of Gastric Ulcer. K. A. Meyer, W. A. Brams and W. N. Graves, Chicago.—p. 1102.
*Operative Treatment of Arthritis Deformans of Hip Joint. R. Whitman, New York.—p. 1108.
*Prostatic Abscess. L. Herman and J. Carp, Philadelphia.—p. 1115.
Spastic Obstruction to Ureters. T. N. Hepburn, Hartford, Conn.—p. 1133.
Torsion of Spermatic Cord; Two Cases. M. Thorek, Chicago.—p. 1142.
Traumatic Aneurysm of Brachial Artery .Treated by Excision and End-to-End Arterial Suture. W. W. Babcock, Philadelphia.—p. 1150.
Postoperative Complications. J. B. Mencke, Philadelphia.—p. 1160.
Surgical Service at Hospital of University of Pennsylvania. I. S. Ravdin, Philadelphia.—p. 1164.

Tumors of Spinal Cord.—Elsberg performed 119 laminectomies for spinal cord tumor, and 270 laminectomies for other affections. Thus of the total of 389 spinal operations, 119, or 30 per cent., were performed on 114 patients for verified new growths within the spinal canal. The operative mortality for extramedullary tumors was: 106 cases, 10 deaths; for intramedullary tumors: 14 cases, 3 deaths. The extramedullary tumor operations were: intradural extramedullary tumors, 69 cases, 5 deaths; tumors of conus and cauda equina, 12 cases, 3 deaths; extradural tumors, 25 cases, 2 deaths. Elsberg says that the end-results after operations for spinal cord tumor, when complete eradication of the growth is possible and the paralytic symptoms have not been of more than two or three years' duration, are very good. Seventy-two per cent. of the patients recovered entirely or are so much improved that they can return to their work. When, however, the growth cannot be removed entirely, either because it is within the substance of the cord and not well localized, or because of the extensive nature of the growth and its intimate relation to other structures, the results are, in the main, unsatisfactory. Some of these patients may be much benefited by the decompressive effect of the laminectomy and the partial removal of the growth, and may improve very much for a number of years.

Bone Tumors.—An analysis made by Christensen of 1,000 cases of bone tumor collected from various sources shows that of osteogenic sarcoma 58.7 per cent. occur in the male, and 41.3 per cent. occur in the female. The highest age incidence for osteogenic sarcoma, for both sexes, is in the second decade of life, although more than 33 per cent. occur after the thirtieth year. The epiphyses are not involved in at least 33 per cent. of osteogenic sarcomas at the diaphyseal ends of long bones. Both sexes are about equally affected with giant-cell tumors, namely female, 53 per cent.; male, 47 per cent. Giant-cell tumors are most common in the third decade of life, but 32 per cent. occur after the thirtieth year. Myeloma (multiple myeloma) is not a disease limited to adult life; 39 per cent. of cases occur before the twenty-first year. Benign angiomas must be considered in every diagnosis of a vascular tumor of the bone. Solitary diffuse endothelioma is not an uncommon tumor, especially in younger people. Predisposing sites for osteogenic tumors, benign and malignant, and giant-cell tumors, are at the ends of long bones, where there is an epiphyseal disk of maximal growth, where the growth is longest, and where the natural growth momentum is greatest.

Surgical Treatment of Gastric Ulcer.—Twenty-two cases subjected to the Polya operation of pyloric resection with gastro-enterostomy are analyzed by Meyer, Brams and Graves. There was an absence of free hydrochloric acid in the stomach contents in all of the eighteen cases which were reexamined; the emptying time, as determined by the roentgen ray, was rapid in ten out of fifteen cases which were reexamined; the intestinal functions were normal in nine out of twelve instances, and diarrhea was present only in one case and the patients as a whole were greatly improved after operation, as shown by freedom from symptoms, gain in weight and a return to their former occupations. No ill effects were noted after the operation and diarrhea was present in only one of the reexamined cases. With the exception of one death, and one patient who was doing only light work, all patients made a complete recovery without further symptoms and were back at their regular occupations.

Operation for Arthritis Deformans of Hip Joint.—Whitman states that the reconstruction operation may be considered as the preferable alternative to arthrodesis for all cases of arthritis deformans of the hip of a favorable type.

Prostatic Abscess.—Herman and Carp analyze twenty cases of prostatic abscess treated by extra-urethral prostatotomy. Eighteen patients may be classified as cured. Three of the patients had some complication, necessitating further operative procedures. One patient had severe bleeding into the bladder and epididymitis; another had a fistula; while the third had a severe bleeding from the bladder, staphylococcic pyemia and lung abscess (with secondary hemorrhage from the lung, necessitating blood transfusion). Two patients were classified as improved but not cured; one (a tabetic) had a urinary fistula; a second had had a small persistent fistula in a lateral perineal incision for years.

Archives of Internal Medicine, Chicago

35: 671-818 (June) 1925

*Standardization of Thyroid Preparations. R. Hunt, Boston.—p. 671.
*Nausea and Related Sensations Elicited by Duodenal Stimulation. R. W. Keeton, Chicago.—p. 687.
*Significance of Urobilogen in Urine as Test for Liver Function. G. B. Wallace and J. S. Diamond, New York.—p. 698.
Blood Volume. IV. Diurnal Fluctuations Incident to Transfusion Reaction. W. Ashby, Rochester, Minn.—p. 726.
Id. V. Effect of Treatment in Cases of Pernicious Anemia. W. Ashby, Rochester, Minn.—p. 733.
Mechanism of Reaction of Nonspecific Protein Agents in Treatment of Disease. II. Influence of Various Agents on Mobilization of Blood Antibodies. C. Y. Ling, Philadelphia.—p. 740.
Id. III. Blood Enzymes. C. Y. Ling, Philadelphia.—p. 752.
*Hourly Hemoglobin Variations in Anemias. E. S. Mills, Montreal.—p. 760.
Electrocardiogram and Blood Pressure During Surgical Operation and Convalescence. H. M. Marvin and R. B. Pastor, New Haven, Conn. —p. 768.
*Id. Effect of Routine Preoperative Digitalization. H. M. Marvin, R. B. Pastor and M. Carmichael, New Haven, Conn.—p. 782.
Involuntary Nervous System: Important Factor in Body's Resistance. E. F. Muller, New York.—p. 797.
Diseases of Pancreas. M. Barron, Minneapolis.—p. 807.

Standardization of Thyroid Preparations.—Hunt found that the physiologic activity of thyroid preparations, as determined by the acetonitril test on mice and by clinical observations, was closely parallel to the iodin content. Little or no physiologically inactive iodin was found by these tests in the thyroids of adult animals. Very small amounts of nonthyroid iodin in adulerated thyroid preparations could be detected by the acetonitril test and also by simple chemical tests. Very few of the thyroid preparations on the market comply with the U. S. P. standard; they were found to vary greatly in physiologic and therapeutic activity.

Sensations Arising from Duodenal Stimulation.—A study was made by Keeton of the sensations arising from duodenal stimulation in a group of patients of whom many showed symptoms of circulatory instability. Chief among these sensations was nausea. Dizziness, pressure sensations referable to the head and neck, headache and syncope also were elicited. When the mechanism of the production of these sensations was considered, it was suggested that nausea resulted from a motor duodenal dysfunction, most probably from a pathologic antiperistalis. The other sensations were regarded as of circulatory origin, and were explained on the basis of a reflex spread into the vegetative (sympathetic-autonomic) nervous system, involving primarily the vasomotor mechanism.

Liver Function Test.—The quantitative test devised by Wallace and Diamond is dependent on Ehrlich's aldehyd reaction, and consists of a series of dilutions of the urine carried to a point where no further reaction takes place. The reading is made by looking through the mouth of the test tube, holding the tube obliquely against a white background. Dilutions may be made with plain tap water. The test has been found six times as sensitive as the spectroscopic method of Wilbur and Addis.

Hemoglobin Variations in Anemia.—The question of variations not only in the percentage of hemoglobin but in the colon index, red cell volume and plasma cell ratio over two hour periods has been investigated by Mills in a series of sixteen cases of anemia. Of these, ten were of the pernicious or addisonian type. The findings were: hourly variations in the percentage of hemoglobin of the blood, which have been shown to occur in normal persons, take place in anemia, though to a lass extent. Hourly variations in the average size of the erythrocyte may be considerable. A definite relation between the percentage of hemoglobin and the cell surface seems to exist in a certain percentage of the cases.

Effect of Preoperative Digitalization on Blood Pressure.—The blood pressure was determined by Marvin et al. and electrocardiograms were taken at frequent intervals during anesthesia and operation in thirty patients who had been completely digitalized. There is no convincing evidence that the preoperative administration of digitalis exerts a favorable influence on the blood pressure or the incidence of postoperative complications in a group of unselected patients. There is suggestive evidence that the drug tends to cause the precise change in blood pressure which it is usually given to prevent. There is no apparent necessity or justification for its routine employment in patients who possess normal hearts.

Archives of Neurology and Psychiatry, Chicago

13: 681-812 (June) 1925

Papillomas of Chloroid Plexus: Six Cases. L. E. Davis, Chicago, and H. Cushing, Boston.—p. 681.
*Position of Head in Cerebral Tumors Above and Below Tentorium. H. W. Stenvers, Utrecht, Holland.—p. 711.
Self-Stimulation Habits of Young Wild Animals. C. P. Richter, Baltimore.—p. 724.
Biologic Diagnosis of States of Excitement and Depression. H. Claude, D. Santenoise and R. Targowla, Paris, France.—p. 729.
*Blood in Personality Disorders. G. W. Henry and E. Mangam, White Plains, N. Y.—p. 743.
Reflexes of Different Order Elicitable from Abdominal Region. G. H. Monrad-Krohn, Oslo, Norway.—p. 750.
*Hyperthermia. K. Kornblum, Philadelphia.—p. 754.
Lipoidol Test for Patency of Cerebrospinal Canal in Sciatica (?). N. Viner, Montreal.—p. 767.

Position of Head in Cerebral Tumors.—Stenvers says that in cases of supratentorial tumor, the patient moves his head backward. The fluid can then flow more easily out of the third ventricle, and the medulla oblongata does not then rest on the dens epistrophei. In cases of subtentorial tumor, the patient will, in suitable cases, keep his head forward to enlarge the communication of the fourth ventricle and cisterna, to enlarge the cisterna and to free the medulla oblongata from pressure.

Blood in Personality Disorders.—Determinations made by Henry and Mangam of the carbon dioxid combining power of the blood plasma of 200 patients consecutively admitted to the hospital indicate that this combining power is unaffected by psychoses unless there is some definite accompanying physical disease. Determinations of the urea nitrogen content of the whole blood of 143 patients consecutively admitted gave negative results. Further studies of the nonprotein nitrogen, uric acid, dextrose and chlorid content of the blood of persons suffering from personality disorders corroborate the negative results reported by other observers. Glucose tolerance tests show more or less characteristic changes in the glucose content of the blood of patients in either phase of affective psychoses and in the acute stages of dementia praecox. These changes indicate a definite retardation of functions of the vegetative nervous system in manic-depressive depression and in the acute stages of dementia praecox and an acceleration of these same functions in manic-depressive excitement.

Hyperthermia.—In only six of a series of thirty experiments done by Kornblum in which destructive lesions were produced in the brain of the dog did the temperature exceed that normally observed in this animal. By means of such lesions, a condition simulating so-called "medullary edema" did not result. The hyperthermia of "medullary edema" is not dependent on a lesion in any definite area of the brain, but is rather the result of a disturbance of widely distributed reflex arcs essential to the maintenance of body temperature. The existence of a cerebral heat center is not confirmed.

Archives of Otolaryngology, Chicago

1: 587-688 (June) 1925

Stenosis of Larynx in Laryngeal Tuberculosis; Four Cases. F. L. Dennis, Colorado Springs, Colo.—p. 586.
Use of Ivory in Rhinoplasty. J. Maliniak, Cincinnati.—p. 599.
Capillary Hemangio-Endothelioma of Nose; Case. B. S. Sharp and G. H. Hansmann, Iowa City.—p. 612.
Pemphigus from Laryngologist's Standpoint. G. B. New and P. A. O'Leary, Rochester, Minn.—p. 615.
Cicatricial Stenosis of Trachea; Three Cases. C. J. Imperatori, New York.—p. 624.
Diagnostic Bronchoscopy; Infant Four Months Old. E. J. Patterson, Pittsburgh.—p. 629.
Closure of Laryngostomic Fistulas. C. F. Nassau, Philadelphia.—p. 632.
"Fractional Fatigue" of Olfactory Apparatus. A. W. Proetz, St. Louis. —p. 638.
Control of Pain Through Nasal (Sphenopalatine) Ganglion. C. L. Davis, St. Louis.—p. 642.
New Endoscope for Closing Safety Pins. A. J. Shekter, Jamaica, Long Island.—p. 643.
Progress in Otolaryngology. J. K. M. Dickie, Ottawa, Canada.—p. 646.

Journal of Experimental Medicine, Baltimore

41: 691-848 (June) 1925

*Relationship Between Growth Capacity of Primary Tumors and Distribution of Metastases of Transplanted Tumor of Rabbit. C. M. Van Allen, New York.—p. 691.
*Experimental Obstruction of Jejunum. Effect of Sodium Chlorid Introduced into Intestine Below Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 707.
*Urobilin Physiology and Pathology. III. Absorption of Pigments of Biliary Derivation from Intestine. P. D. McMaster and R. Elman, New York.—p. 719.
Relative Reaction Within Living Mammalian Tissues. IV. Vital Staining with Phthaleins, P. Rous, New York.—p. 739.
Skin Reactions to Simultaneous Treatments with Radiant Heat and Soft Roentgen Rays. J. A. Hawkins and H. Clark, New York.—p. 761.
*Liver as Source of Bacterial Agglutinin. F. S. Jones, Princeton, N. J. —p. 767.
Surface Tension of Serum. XIII. Physicochemical Changes in Serum as Result of Immunization. P. L. du Noüy, New York.—p. 779.
*Occurrence of Stigmata of Congenital Syphilis in Rabbits; Factor of Inheritance. W. G. Brown and L. Pearce, New York.—p. 795.
*Experimental Production and Transmission of Tar Sarcomas in Chickens. J. B. Murphy and K. Landsteiner, New York.—p. 807.
*Group of Micro-Organisms Transmitted Hereditarily in Ticks and Apparently Unassociated with Disease. E. V. Cowdry, New York. —p. 817.

Growth Capacity of Primary Tumors and Distribution of Metastases.—As an adjunct to the study of a transplantable malignant tumor of the rabbit, an index of malignancy has been developed by Van Allen which has proved useful in evaluating the severity of the disease for the purpose of statistical investigations. From this analysis it is concluded: (1) that the severity of the disease, as a whole, is very irregular among individuals of a series and from series to series, and (2) that the relationship between the extent of the primary lesions and that of the secondary lesions is inconstant among individuals but assumes definite proportions when the data are viewed in the mass. An attempt has been made to account for these results in the light of what has been ascertained of the modes of defense of the rabbit host against the inroads of the cells of this transplanted tumor.

Experimental Obstruction of Jejunum. — The results obtained by Haden and Orr emphasize again the constancy of the changes in the blood of the dog following high intestinal obstruction. Every animal shows a fall in chlorids and many have an increased carbon dioxid combining power of the blood plasma. In most cases there is a rise in the urea nitrogen and nonprotein nitrogen. The change in the chlorids is, however, the one constant finding. The results in the animals treated by the introduction of sodium chlorid solutions into the intestine below the point of obstruction are similar to those obtained when animals are given sodium chlorid subcutaneously and intravenously. The findings are of special interest in adding further evidence of the value of sodium chlorid in the treatment of the toxemia incident to intestinal obstruction. It is evidence that the sodium chlorid introduced directly into the lumen of the intestine is well absorbed and as efficacious as when given subcutaneously or intravenously.

Absorption of Bile Pigments.—Direct proof of the absorption of bile pigments from the intestinal tract is presented by McMaster and Elman.

Liver as Source of Bacterial Agglutinin.—Jones found that the greatest concentration of small amounts of antigen were killed within a short period. The serum of those more highly immunized contained the greatest concentration of antibody. A single injection of antigen into a radicle of the mesenteric vein resulted in a considerable concentration of agglutinin in the liver. Other experiments indicated that the liver does not act as a reservoir for the antibody. It has also been shown that this concentration of agglutinin cannot be ascribed to the blood left within the liver, since the blood serum was relatively poor in antibody. The experiments indicate that the agglutinin was produced within the liver.

Stigmas of Congenital Syphilis.—The occurrence of stigmas of syphilis in the progeny of syphilitic rabbits and the probable cause for such conditions in cases in which no infection can be demonstrated is discussed by Brown and Pearce. The history of a group of animals presenting these conditions is given, and the possible causes are discussed in the light of evidence derived from a study of these animals. In this instance, it appeared that the lesions suggesting syphilis were of functional rather than of infectious origin, and that heredity was an important factor in determining their occurrence.

Experimental Tar Sarcoma.—Murphy and Landsteiner report the occurrence of two spindle cell sarcomas that developed as the result of the injection of coal tar into induced embryomas in chickens. One of these, transplanted to other chickens for eleven generations, is highly invasive in character, and metastasizes freely. Attempts to transmit this neoplasm by a filtrate or desiccate of the tumor have failed of success.

Micro-Organisms Transmitted Hereditarily.—Pleomorphic, bacterium-like, gram-negative, intracellular micro-organisms, which stained much less intensely with ordinary dyes than most bacteria were found by Cowdry in sixteen species of ticks comprising examples of *Argasidae* and *Ixodidae*. No evidence was seen of injury to the tissues of the arachnid hosts of the micro-organisms other than that incident to mechanical distention of the cells containing them. The detection of the micro-organisms in the eggs of ten species, in the unfed larvae of eight species, and at nearly related stages throughout the life cycle of three others leads to the conclusion that they are transmitted hereditarily.

Journal of Infectious Diseases, Chicago

36: 501-580 (June) 1925

*Production of Local Immunity by Means of Diphtheria Toxin. J. A. Bowen, Cincinnati.—p. 501.
*Blood Changes in B. Welchii Infection. B. S. Cornell, Toronto.—p. 508.
*Habitat of B. Histolyticus in Human Intestine. J. C. Torrey, New York.—p. 516.
*Precipitating and Neutralizing Scarlatinal Antistreptococcus Horse Serum. E. C. Rosenow, Rochester, Minn.—p. 525.
Methylene Violet and Methylene Azure A and B. A. J. MacNeal, New York.—p. 538.
*Hemolytic Properties of Whole Cultures and Sediments of Hemolytic Streptococci. N. P. Sherwood and C. M. Downs, Lawrence, Kan.—p. 547.
Dormancy in Bacteria. V. Burke, A. Sprague and L. Barnes, Pullman, Wash.—p. 555.
Coccidioides Immitis. W. S. Bump, Chicago.—p. 561.
*Relationship of Hard Water to Health. J. T. Myers, Omaha.—p. 566.

Local Immunity in Diphtheria.—Bowen has succeed in producing local immunity to diphtheria of at least two months' duration. The local immunity is apparently accompanied by a low degree of general immunity.

Welch Bacillus Causes Anemia.—By infecting rabbits with *B. welchii*, Cornell was able to produce a chronic anemia of varying degree. The blood picture presents, as its chief point of interest, the constant phenomenon of anisocytosis.

Habitat of Bacillus Histolyticus in Intestine.—The recovery of *B. histolyticus* from the ileocecal region of two persons is reported by Torrey. One had a severe and long standing epilepsy, and the other a chronic constipation with marked stasis in the cecum and colon. In addition, the organism was isolated from specimens from the stools of two other persons suffering from abnormal intestinal conditions. The occurrence of this organism in the lower ileum and cecum suggests the possibility of absorption of its toxic products.

Studies on Hemolytic Streptococci.—The experiments on toxicity and neutralization made by Rosenow not only support the newer results obtained in scarlet fever by the Dicks and by Dochez, but also show that great differences occur in the toxin producing power of scarlatinal and nonscarlatinal strains of hemolytic streptococci, and that certain strains possess this power to a high degree years after isolation. Moreover, they show that it is possible to produce in the horse a neutralizing serum by intravenous injection of dead and living hemolytic streptococci from scarlet fever. Rosenow wonders whether specificity in the scarlatinal hemolytic streptococcus may not be an expression of high toxin producing power and of other peculiar acquired properties in the hemolytic streptococcus group.

Streptolysin and Hemolytic Sediments.—The similarity and differences of streptolysin and hemolytic sediments are pointed out by Sherwood and Downs. The evidence points toward an identical mechanism.

Hard Water Not Cause of Urinary Calculus.—No evidence was found by Myers proving hard water to be an etiologic factor in urinary concretion formation.

Journal of Laboratory and Clinical Medicine, St. Louis

10: 695-786 (June) 1925

*Insulin: Intradermal Injection. E. F. Müller and H. B. Corbitt, New York.—p. 695.
*Carbohydrate Metabolism of Infants. F. F. Tisdall, T. G. H. Drake and Alan Drake, Toronto.—p. 704.
*Dietetic Management of Cardiac, Vascular and Renal Disease. J. R. Darnall, Washington, D. C.—p. 712.
*Pneumococcolytic Activity of Bile from Experimental Bacteriol Cholecystitis of Rabbits. M. J. Harkins, Philadelphia.—p. 716.
**Simple and Rapid* Quantitative Test for Albumin in Urine. W. G. Exton, New York.—p. 722.
Influence of Acids on Viability of Bacteria. H. Yaoi, Tokyo, Japan.—p. 735.
Kolmer's Cholesterinized Versus Acetone Insoluble Antigen. W. H. Kellogg, Berkeley, Calif.—p. 751.
*Preparation and Clinical Tests of Antistreptococcus Serum. N. S. Ferry, R. W. Pryer and L. W. Fisher, Detroit.—p 753.
*Effect of Constipation and Catharsis on Urobilinuria. R. S. Dean, Cleveland.—p. 757.
Local Anesthesia. I. Turck's Reflex Method to Determine Efficiency of Anesthetics. W. J. R Heinekamp, Chicago.—p. 763.
Method for Sampling and Analysis of Stomach Gas. A. D. Dunn and F. L. Dunn, Omaha.—p. 769.

Intradermal Injection of Insulin.—The effect of insulin varies with the route of administration. Muller and Corbitt assert that the effect of insulin injections on the blood sugar content of normal rabbits is markedly increased if the intradermal method of administration is employed; subcutaneous injections of the same amount of insulin into the same as well as into different animals are less effective. A comparison of intradermal, subcutaneous and intravenous injections of equal amounts of insulin shows that their effectiveness decreases in the order mentioned. The degree and the period of effectiveness does not depend on the rapidity of resorption, but on a hitherto unknown factor, very probably related to the action of the involuntary nervous system. This property seems to be inherent in the skin rather than in the subcutaneous tissues or in the body fluids.

Carbohydrate Metabolism of Infants.—A procedure has been devised by Tisdall, Drake and Brown whereby blood sugar determinations may be made with the use of only 0.2 c.c. of blood. The procedure is based on the Shaffer-Hartmann method. The results obtained are usually accurate within 5 per cent. The average fasting concentration of blood sugar in twenty approximately normal infants was found to be 0.087 per cent. In twelve cases of marasmus, the average concentration was 0.07 per cent. Values as low as 0.05 per cent. were obtained in the latter group. When 5, 10 and 15 per cent. solutions of glucose are given interstitially to normal infants the blood sugar curve reaches its height about half an hour after the injection is given. This rapidity of absorption is of practical value when an intravenous injection cannot be given readily. The rise in blood sugar concentration in normal infants is more marked after the interstitial injection of 5 per cent. glucose. The fall in the blood sugar curve after interstitial injections of glucose occurs with remarkable rapidity. The intravenous injection in normal infants of large amounts of glucose; i. e., 1 gm. of glucose per pound of body weight, is followed by a rapid diminution of the blood sugar concentration, after the preliminary rise. One hour after injection, the concentration may actually be less than that found before the injection. Infants with conditions such as acute intestinal intoxication and fermentative diarhea, are unable to utilize glucose introduced parenterally with the same rapidity as normal infants. Attention is again directed to the remarkable ability of the normal infant to utilize glucose introduced parenterally.

Dietetic Management of Cardiovascular Renal Disease.—No attempt is made by Darnall to give detailed advice or set dogmatic rules, but only to present general plans for the logical dietary treatment for cases of cardiocirculatory impairment and renal insufficiency. Certain dietary principles are given which may serve as a flexible guide to the dietary management of these closely associated and often overlapping pathologic conditions.

Experimental Bacterial Cholecystitis.—A bacterial cholecystitis was produced by Harkins in rabbits by the direct injection of *Streptococcus mitis, Staphylococcus aureus, Staphylococcus albus* and *B. coli-communior* into the gallbladder. The bile from these gallbladders, except in the case of injection of *B. coli-communior,* loses its pneumococcolytic activity. The pneumococcolytic activity of bile from cholecystitis of rabbits produced by *B. coli-communior,* while present, is somewhat delayed and in vivo this result was confirmed. Of twenty-four human bile specimens tested for pneumococcolytic activity, all were found to possess this characteristic. Suspension of *Streptococcus mitis, Staphylococcus aureus* and *S. albus, B. coli-communior,* and leukocytes in normal rabbit bile did not remove the activity. Also cultures of the micro-organisms in 10 per cent. bile medium failed to remove this characteristic.

Quantitative Test for Albumin in Urine.—A simple and rapid quantitative test for albumin in urine is described by Exton. Every contingency which is known to arise in the examination of urine for albumin is said to be met by the method, which requires no more time or manipulation for its performance than do the qualitative clinical tests in common use. The specific and quantitative features of the new test impart an accuracy and uniformity to albumin determinations which make them clinically valuable to a degree hitherto impossible. The precipitant is used in the form of a single solution which appears to keep indefinitely. It contains sulphosalicylic acid, 50 gm, sodium sulphate (crystals), 10 gm., bromphenol blue (clear, saturated, 0.4 per cent. watery solution), 25 c.c., and distilled water to make 1 liter. The mixture should be filtered.

Antiscarlet Fever Serum.—An antistreptococcus scarlatina serum has been prepared by Kellogg with both antitoxic and antibacterial properties. This serum has proved of value as a therapeutic agent in scarlet fever. The serum has been concentrated to at least six times it original strength with favorable clinical results.

Effect of Constipation on Urobilinuria.—Dean states that constipation exaggerates a pathologic urobilinuria. Evacuation of the bowel diminishes it.

Medical Journal and Record, New York

72: 1-60 (July 1) 1925

The New Surgery. H. A Kelly, Baltimore—p. 1.
Electrocoagulation in Surgery. W. D. McFee, Boston.—p. 3.
Digestive Symptoms Caused by Disease of Abdominal Vessels. I. W. Held, New York.—p. 6.
Asthma with Pneumothorax. C. A. Spivacke, New York.—p 10
Clinical and Roentgen-Ray Considerations of Duodenal Ulcer. J. S. Diamond, New York.—p. 12.
Plea for Early Operation in Diseases of Gallbladder. M. E. Blahd, Cleveland.—p 17.
Psychosis Following Surgical Operations. A. L. Soresi, New York.—p. 20.

Chronic Prostatitis; Focal Aspects. J. E. Holloway and W. H. Von Lackum, Rochester, Minn.—p. 23.
Renal Function Determination Aided by Use of Sodium Salicylate Intravenously. A Strachstein, New York.—p. 28.
Regional Anesthesia in Urologic Surgery. W. S. Pugh, New York.—p. 30.
Strangulated Inguinal Hernia of Urinary Bladder. C. F. Horne, Baltimore —p. 32
Value of Uranalysis in General Examination Compared with Blood Chemistry. W. A. Cowell, Olean, N. Y.—p. 34.
Diagnosis of Surgical Diseases of Urinary Organs. J. U. Reaves, Mobile, Ala—p. 36.
Problem of Forcing Fluids for Infections of Urinary Tract. C. E. Haines, New Rochelle, N. Y.—p. 38.
Therapeutic Relationship of Digitalis and Strophanthus. E. E. Cornwall, Brooklyn.—p. 39.

Philippine Journal of Science, Manila

27: 1-160 (May) 1925

*Viability of Bacillus Dysenteriae. H. Kusama.—p. 1.
*Epidemiologic Study in Leprosy. G. R. Callender and T. Bitterman.—p. 9
New Species of Philippine Plants Collected by A. Loher. E D. Merrill. —p. 21.
Magellania Dickersoni, New Species of Branchiopod. I. Hayasaka.—p 61.
Little Known Tipulide from Philippines (Diptera). C. P. Alexander. —p 71.
Second Lot of Parasitic Hymenoptera from the Philippines. A. B. Gahan —p. 83.
Bumblebees of Philippine Islands T. H. Frison —p 113.
Two New Cassidas from Philippines V. F. Spaeth —p. 125.

Viability of Dysentery Bacillus.—Kusama says that unlike the vibrio of cholera, *B. dysenteriae* is fairly resistant to drying It will survive longer in a sterile than in a normal fresh stool. *Bacillus dysenteriae* will survive a considerable length of time in water. In salt solution, and consequently in sea water, it will survive longer than in tap or distilled water. Physiologic sodium chlorid solution and bile are favorable mediums for the survival of *B. dysenteriae* in the stool, and the combination of the two may help to preserve *B. dysenteriae* in the stools of dysentery patients and carriers, in at least a certain percentage of cases.

Epidemiologic Study of Leprosy.—A study was made by Callender and Bitterman of some of the epidemiologic aspects of the histories of 259 lepers. Additional evidence is presented that the earliest recognizable lesion is in the anesthetic area. These data on the location of the primary lesion, added to the data reported by others, favor the theory that the organism enters the body through abrasions or similar wounds in the integument of the exposed parts of the body. The age at which the first symptom appeared in the cases of this series also agrees with the findings of others, that the more susceptible ages are in the first decades, although no age appears exempt.

Radiology, St. Paul

4: 445 536 (June) 1925

Pyelographic and Roentgenologic Diagnosis of Renal Tumors. W. F. Braasch and R. D Carman, Rochester, Minn —p. 445.
Thyroid Disease E L Jenkinson, Chicago —p. 453.
Surgical Aspect of Thyrotoxicosis. E P. Richardson, Boston. —p 458.
Results of Surgical and Roentgen-Ray Treatment of Exophthalmic Goiter A. C Christie, Washington, D. C —p 464
Roentgen Ray Treatment of Thyrotoxicosis. R G. Allison, Minneapolis. —p 470
Radium Treatment of Thyrotoxicosis R. E Loucks, Detroit —p. 473.
Heredosyphilitic Cranial Osteoporosis K. A. Menninger, Topeka, Kan. —p. 480
Radioactive Substances and Their Therapeutic Uses and Applications. J Muir, New York.—p 492
Portable Apparatus for Measuring Roentgen Rays R. Kegerreis, Ann Arbor, Mich —p 497.
Projection Electroscope for Quantitative and Qualitative Roentgen-Ray Measurements H N. Beets, Chicago —p 500
Oil Immersed Coolidge Tubes at 200 K V S. Withers, Denver.—p 502.
Physiological Dominance and Biological Effects of Rays. W. T. Bovie, Cambridge, Mass —p. 510

Wisconsin Medical Journal, Milwaukee

24: 1-56 (June) 1925

Epidermophytosis C. J. White and A. M. Greenwood, Boston.—p. 1.
Functions of Skin and Their Importance in General Medicine. E. F. Mueller, New York.—p. 10
Psychology of Industrial Surgery. H. W. Powers, Milwaukee.—p. 17.
Industrial Surgery. R. Kaysen, Milwaukee.—p. 21.
Industrial Surgeon. E. W. Miller, Milwaukee.—p. 25.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Pickett-Thomson Research Laboratory, London

1: 217-294 (June) 1925

Preparation of High-Class Nutrient Medium for Cultivation of Germs Difficult to Grow. D. Thomson and R. Thomson—p. 217.
*Bacterium Pneumosintes. D. Thomson and R. Thomson.—p. 229.
*Bacteriology of Respiratory Tract in Influenza, Measles, Etc. Six New Species of Organisms. D. Thomson.—p. 253.
Classification and Identification of Germs by Microphotography. D Thomson and R. Thomson.—p. 263.
Mechanical Disintegration of Germs and Other Protein Substances Such as Tissues. D. Thomson.—p. 275.

Bacterium Pneumosintes Detoxicated Vaccine.—During the past six months the Thomsons have grown sufficient amounts of *B. pneumosintes* to make large quantities of a toxic vaccine, and they hope to be able to collect shortly sufficient quantities of this germ to enable them to prepare a considerable quantity of a detoxicated vaccine of this organism. The germ is extremely soluble in alkali. It is more soluble than the gonococcus, and it can therefore be detoxicated very easily. The authors have ascertained that in the detoxication of this germ the alkali used need not be stronger than hundredth or two hundredth normal sodium hydrate and the antigenic properties of the vaccine should not be affected thereby. With regard to the toxic *B. pneumosintes* vaccine, the Thomsons carried out some preliminary experiments on themselves. From these experiments it would appear that a suitable dose of the toxic vaccine for prophylaxis should be about 25 millions. Owing to its extreme toxicity they believe that detoxicated vaccines of this organism are much to be desired, and they should be very satisfactory owing to the fact that extremely weak alkali need only be used in the process of preparation.

Bacteriology of Respiratory Tract.—An organism resembling *B. pneumosintes* was isolated by Thomson from a case of engadine fever, and two new organisms were isolated from the sputum of influenza cases occurring in London, a gram-negative anaerobic diplococcus (gas producer) and a gram-negative anaerobic diplococcus (nongas producer). From an early acute case of measles he isolated a gram-negative pleomorphic bacillus, a gram-negative oval diplococcus and a thin gram-negative anaerobic bacillus. He recovered a new gram-negative bacillus resembling a vibrio from his own sputum.

British Journal of Ophthalmology, London

9: 321 384 (July) 1925

Phacoerisis; 115 Cases. M. M. Cruickshank.—p. 321.
Edward the Confessor's Physician. R. R. James —p. 351.

British Medical Journal, London

1: 1159-1202 (June 27) 1925

*Certain Phases of Leukocyte Activity. C. J. Bond.—p. 1162.
*Estimation of Cardiac Output as Measure of Its Efficiency. T. S. Wilson —p 1167.
*Urinary Infections with B. Coli and Pyogenic Cocci; Treatment with Collargol H. H. Sanguinetti – p 1168.
*Clinical Study of Rheumatoid Arthritis. A. H. Douthwaite.—p. 1170.
*Significance of Hemorrhage in Chronic Uterine Sepsis. R. Hobbs.—p. 1172.
Poisoning by Eucalyptus Oil. P. C. Garrett —p. 1172.
*Rupture of Abdominal Aneurysm Simulating Acute Intestinal Obstruction. H. Jaffe —p. 1173.

Leukocyte Activity.—In 1919 Bond showed that when washed red cells are ground up, a drop of the suspension of the washed and sedimented débris, when incubated (in a closed cell) with two or three drops of the freshly drawn blood from the same individual, exercises a leukotoxic effect on the native leukocytes, varying in intensity according to the degree of concentration of the red cell débris in the incubated blood. The leukocytes emigrate very sparsely from the incubated clot, and those cells which adhere to the slide show marked signs of arrested activity, and cytolysis. In diseases like malaria and hemoglobinuria, in which a mass destruction of red cells occurs periodically, leukotoxic substances are present in the blood serum during the acute phases of the disease.

In pneumonia, in the acute febrile stage, the carpet of leukocytes which covers the floor of the cell in which the blood is incubated is a thick one, the cells are very active, and a large quantity of iodophil substance is liberated. These and other facts suggest that it is some change on the surface of the red cell which brings about the altered attitude on the part of the leukocytes. Comparative observation on serum from the general and the splenic circulation confirms the statement that substances which are capable of stimulating the aggressive activity of leukocytes toward red cells are present in the blood in situations and in organs where, normally, red cells are undergoing disintegration. The observations here recorded by Bond are concerned with the chemical and physical changes which can be observed in leukocytes as the result of, or in association with, the so-called process of stimulation. Briefly, iodophil droplets are extended from these cells. The property of elaborating iodophil substances is not confined to leukocytes. It is present in certain epithelial cells, both in the skin and in mucous membranes, especially those lining the orifices of the mucous canals, also in some marrow cells, in the giant myeloid cells in sarcomata of bony tissues, and in some cancer cells of epithelial origin. In the light of the observations now recorded it seems probable that this iodophil substance is not glycogen, as was originally thought, but (as shown by the reactions given with platinum salts) that it consists partly at least of lecithin in the water-soluble form, together with cholin split off from the lecithin. Further, it seems probable that the lecithin component is derived from the partial solution of the perinuclear lipoid membrane during cell activity, and that cell recovery depends on the lecithin content of the cell, and may be associated with the restitution of this perinuclear lecithin membrane.

Estimation of Cardiac Output.—On comparing the information gained by observation of the size of the lungs, of the physical condition of the liver as judged by percussion, together with the size of the area of cardiac dulness and the results given by the sphygmomanometer, Wilson says, a very trustworthy and exact estimate can be formed as to the cardiac output, and the recognition of myocardial weakness will be made more easily, whether toxic in nature or due to atheroma of the coronary arteries. It may be lessened by the compensatory diminution in the total volume of blood in circulation which occurs (apart from cardiac weakness) in starvation and certain other pathologic conditions.

Treatment of Urinary Infections.—Sanguinetti concludes that whether the infection ascends or descends, infection of the bladder alone is a very frequent condition in chronic cases, and that even if the acute cases start in the renal pelvis, the infection there soon disappears, while that in the bladder persists. Hence bladder injections are indicated in these cases. Sanguinetti reports good results from the use of such injections.

Treatment of Rheumatoid Arthritis. — The treatment employed by Douthwaite in these cases consisted of: (1) Immobilization of joints in the acute stage, if possible by extension splints. (2) Eradication of septic foci. (3) Immunization by means of an autogenous vaccine. (4) Massage and passive movements. (5) Autoserotherapy.

Hemorrhage from Puerperal Uterus.—If the lochia are still red by about the seventh to the tenth day, Hobbs regards this as a sign of secondary hemorrhage from the uterus. He has found that glycerin is the best drug in stimulating the uterus to contract, and stops hemorrhage far better than any form of intra-uterine manipulation or medication.

Rupture of Abdominal *Aneurysm.*—In the case cited by Jaffe, there was a rupture of three fingerbreadths in the right lateral wall of a fusiform aneurysm of the abdominal aorta. This aneurysm, the size of a man's fist, extended from a point one-half inch below the level of the origin of the renal arteries to a point just above the bifurcation of the aorta; the walls of the aneurysm, common iliac arteries, and the portion of the aorta proximal to the aneurysm were markedly atheromatous. The right kidney was polycystic, but no other macroscopic changes were noted in the abdominal organs.

Edinburgh Medical Journal

32: 325-388 (July) 1925

*Spontaneous Arteriovenous Aneurysm in Thorax. T. Shennan—p 325
Bones in Congenital Proximal Radio Ulnar Synostosis D M Greig—p. 354.
Cases of Congenital Cardiac Defect in Children. A. R. MacGregor—p. 370. Cont'd.

Spontaneous Arteriovenous Aneurysm in Thorax.—Shennan cites two cases, one of perforation of an aneurysm of the aorta into the superior vena cava with syphilitic aortitis, and one of perforation of the extension of an aneurysm of the aorta into the upper part of the right auricle with syphilitic aortitis. The aneurysm in this case partly obliterated the lower part of the superior vena cava, leaving two narrow channels, anterior and posterior, the rupture occurring into the right auricle just below the caval opening; the case, clinically, resembling those in which the perforation was higher up. Shennan also reviews sixty reported cases of perforation into the innominate vein or superior vena cava.

Journal of Laryngology and Otology, Edinburgh

60: 357-424 (June) 1925

Septicemia and Acute Infections of Middle Ear Tract. G. J. Jenkins—p 357.
Is Localization of Sound a Function of Membrana Tympani and Ossicles? J. A Keen.—p. 363.
Infective Scleroma of Respiratory Passages F. Lasigna—p. 369
Variations in Time Required to Induce Anesthesia by Surface Application of Cocain Hydrochlorid Solution in Varying Concentration E Watson-Williams—p 374
Case of "Malignant Granuloma of Nose." G. A. D. M'Arthur.—p 378

40: 425-492 (July) 1925

Function of Vestibular Organ; Clinical Examination of Otolithic Apparatus. F. H. Quix—p. 425.
How Does Caloric Nystagmus Arise? S H Mygind.—p 444
Intracranial Infection by Erosion from Subperiosteal Abscess T. R Rodger—p. 451
*Tuberculous Disease of Middle Ear. H. W. D. M'Cart.—p. 456
Otogenous Brain Abscess—Right Temporal Lobe A. R Tweedie—p. 467.
Elongated Styloid Processes; Case A Evans—p. 469

Tuberculous Disease of Middle Ear.—There appear to be two groups of cases of tuberculous otitis media: (*a*) Tuberculous otitis media in children under 15 years of age, and (*b*) tuberculous otitis media in adults. In seven of the nine cases cited by McCart, pulmonary phthisis was taken as the primary focus. In 4,060 cases of chronic middle ear suppuration (of all ages), 845 radical mastoid operations were performed. Of these, thirty-one (4 per cent.) were tuberculous cases. Practically 100 per cent of children under 2 years of age, undergoing the radical mastoid operation, were suffering from tuberculous otitis media.

Journal of Oriental Medicine, Dairen, China

3: 1 52 (March) 1925

Pharmacodynamics of Pseudoephedrins and Ephedrins M Fujii—p. 1
Porokeratosis Vera. S. Hidaka.—p. 27.
Kerato angioma Punctatum Symmetricum. S. Hidaka—p 30.
Action of Insulin K. Okashima and J. Ohkuni.—p 32
Naevus Epitheliomatosus Sebaceus. S. Hidaka—p. 44.
Types and Toxicities of Bacilli of Child Dysentery in Manchuria. N Hoshi—p 45
Pyelography H. Yanagihara and T Miyata—p 46.
Calcium Content of Liver and Skeletal Muscles in Avitaminosis Y Jono.—p 47
State of Adiposity in Avitaminosis Y. Jono—p. 48.

Lancet, London

2: 1 52 (July 4) 1925

Disorders of Motility and of Muscle Tone, Corpus Striatum S A Kinnier Wilson—p 1.
*Organization and Work of Light Department in Hospital for Surgical Tuberculosis. H. Gauvain—p 10.
*Wagner-Jauregg Treatment of Dementia Paralytica. S. Grossman—p. 16
Milk Borne Epidemics F W C Brown—p 18
Strangulated Obturator Hernia, Laparotomy. Recovery. W. Tyson—p. 20
Case of Thrombo Angiitis Obliterans of Twenty-Two Years' Duration. D. P. Weber.—p 21

Light Therapy of Tuberculosis.—Gauvain regards light as being valuable in the treatment of surgical tuberculosis, and without it much that is now being accomplished at Alton could not be done at all, while much more is very definitely aided. Certain cases derive greater benefit from artificial light than from sunlight, and vice versa.

Malaria Treatment of Dementia Paralytica.—Grossman feels that the treatment of general paralysis with benign tertian malaria is justified; the technic is simple; the fever can be controlled easily and quickly by quinin. No malaria relapses have occurred in his experience.

Tubercle, London

6: 473-520 (July) 1925

Use of Roentgen Rays in Diagnosis of Pulmonary Tuberculosis. J. E. A. Lynham.—p. 473.
*Herpes Zoster and Tuberculosis. S. Magnusson.—p. 482.
Genito-Urinary Tuberculosis. T. E. Hammond.—p. 490.

Herpes Zoster and Tuberculosis.—Magnusson reports one case of herpes zoster of the palate and tongue, with facial paralysis, and ten cases of herpes zoster which occurred among a total of about 1,500 patients suffering from pulmonary tuberculosis. In the first case eruption of herpes and the development of facial paralysis followed tuberculin treatment so closely that they were evidently provoked by it, being probably the expression of a tuberculotoxic inflammation of the cranial nerve ganglia. In the second case, the herpes, which involved the thoracic nerves (thoracic ganglia), seemed to be provoked by tuberculin (bacillary emulsion), though the relationship was not so definite as in the first case. In seven cases the herpes appeared in the zones the reflex connections of which corresponded to the lung or pleura most affected. In two cases the herpes appeared in the zones which may be supposed to correspond to the diseased intestines (intestinal tuberculosis). The herpes developed in both benign and severe cases, and it would, therefore, seem to be of no prognostic importance.

Archives de Médecine des Enfants, Paris

28: 337-400 (June) 1925

Pathogenesis of Acute Infections of Respiratory Tract. K. Lewkowicz. —p. 337.
Nonspecific Protein Therapy in Children. Pignero.—p. 364.
Mange from Cat in Child of 10. R. Labbé.—p. 370.
Protein Therapy in Children. J. Comby.—p. 374.

Bulletin de l'Académie de Médecine, Paris

93: 631-670 (June 9) 1925

*Sea and Sun Therapy in Rickets. L. Jaubert.—p. 657.
Tubercle Bacilli in Pharynx of Infants with Positive Skin Reaction. Lesné and Langle.—p. 660.
*Treatment of General Paralysis. A. Marie and V. Kohen.—p. 664.

Sea and Sunlight Treatment in Rickets.—Jaubert summarizes the results of this treatment, applied in the course of seven years to 210 children, aged from 2 to 4. Of the 42 per cent. affected with a severe form of rickets, sixty-eight children were unable to walk. Most of them started to walk after two or two and a half months' treatment; others after seven or eight months. About 53 per cent. had a moderate form of the disease, and about 5 per cent., a mild form. The treatment, corresponding to the form, lasted from three to twelve months. Sun baths, mostly on the beach, were given every day, if the air temperature was not below 30 C. In the winter, the sun baths were given from 10 to 12 for two hours. In the summer, the baths were given from 6 to 7 a. m., the exposure to the sun lasting only one hour. Besides, the children were given hot seawater baths. About 200 children were cured or considerably improved.

Fever-Inducing Treatment of General Paralysis.—Three years' observation has convinced Marie and Kohen that milk and nucleinate injections should first be tried in fever-inducing treatment. If the results are negative, in patients not affected with tuberculosis, injections of tuberculin at gradually increasing doses (beginning with 0.0005 gm.) should be used, alternating with bismuth. In certain patients a fever of 39 C. may be induced with less than 0.5 mg. of tuberculin, while advanced general paralysis may not respond even to 2 or 3 gm. If this method fails, then only should the malaria treatment be applied in young patients without kidney, heart or liver affection. The resulting improvement will be maintained by two or three series of bismuth injections yearly.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 789-847 (May 29) 1925

Rickets and Light. Marfan.—p. 791.
*Induced Bilateral Pneumothorax. E. Coulaud.—p. 792.
*Treatment of General Paralysis. Claude and Targowla.—p. 795.
Acute Poliomyelitis with Paraplegia. Laignel-Lavastine.—p. 806.
*Herpes and Varicelloid Eruption. Troisier and Delalande.—p. 808.
Case of Uremic Nephritis. P. Merklen et al.—p. 812.
Postencephalitic Parkinsonian Syndromes. Renaud and Auger.—p. 820.
Eruption with Bubonic Plague. P. Teissier et al.—p. 824.
Anaphylactic Shock from Insulin. Raynaud and Lacroix.—p. 831.
*Neuritis of the Circumflex in Diabetes. Sergent and Kaufmann.—p. 840.
*Meningeal Reaction in Diphtheria. Babonneix and Pollet.—p. 842.
Enterococcus Septicemia. Brelet.—p. 844.

Efficacy of Bilateral Artificial Pneumothorax.—In the case observed by Coulaud, in a young woman, the collapse of each lung was as complete and efficient as in a unilateral induced pneumothorax. The treatment succeeded in arresting the development of the tuberculous process. There was no dyspnea with the minus 2 pressure on each side.

Results from Malaria Treatment of General Paralysis.—Claude and Targowla describe two cases in women, aged 35 and 54, among thirty thus treated. They emphasize that the mental condition particularly and certain organic lesions were improved, but persistent reactions in the cerebrospinal fluid showed that the process in the brain and meninges was not checked.

Herpes Zoster Coexisting with Eruption Resembling Chickenpox.—In the case reported by Troisier and Delalande a generalized varicella-like eruption followed twenty-four hours after the appearance of the herpes. They believe that the simultaneous development of the two affections in another patient testifies to their different origin.

Neuritis of the Circumflex in Diagnosis of Diabetes.—Sergent and Kaufmann call attention to the frequent inflammation of the circumflex nerve in diabetes, revealed by motor disturbances in the deltoid muscle. The neuritis, analogous to sciatica in diabetics, is probably of toxic origin. The phenomenon may be helpful in diagnosis of latent diabetes.

Cerebrospinal Fluid Test in Diphtheric Paralysis.—Lumbar puncture made over two months after the appearance of a generalized paralysis showed an inflammatory hyperalbuminosis and lymphocytosis; the two phenomena are usually dissociated. Evidently the meningeal reaction depends on the location of the lesions, which may or may not affect the pia mater.

49: 849-884 (June 5) 1925

Asthenia and Syphilis. P. Merklen and A. Devaux.—p. 849.
Light and Rickets. P. F. Armand-Delille.—p. 852.
*The Soil in Immunity to Diphtheria. C. Zoeller.—p. 853.
*Course of Postencephalitic Parkinsonism. P. Harvier.—p. 858.
Rupture of Biceps from Gymnastics. Thiel and Minot.—p. 859.
Pituitary Treatment in Diabetes. M. Labbé and L. Denoyelle.—p. 860.
Salicylate Treatment in Meningitis Insipidus. P. Pagniez et al.—p. 865.
*Pneumothorax and Pregnancy. A. Pellé.—p. 867.
Case of Bronchopleural Perforation. R. Burnand.—p. 871.
Arteritis Obliterans in Lower Limbs. Emile-Weil and Lévy-Franckel. —p. 879.
Polioencephalomyelitis of Syphilitic Origin. Fribourg-Blanc and Jausion. —p. 880.

Rôle of the Soil in Immunity Against Diphtheria.—Zoeller emphasizes the rôle of the soil, the natural reactivity, in immunization by diphtheria anatoxin. The positive Schick reaction became negative after one injection in seven out of nineteen persons vaccinated, in four after two injections, in eight after three. Inoculation or an occult contact with the specific microbe induce an acquired reactivity. Recurrent diphtheria ought to be borne in mind, and differentiated from the ordinary sore throat in diphtheria carriers. Analogous conditions are observed in persons repeatedly exposed to contact with diphtheria bacilli and nevertheless showing a positive Schick reaction. Natural reactivity may be a familial and hereditary property. He also points to hyperreceptivity, confirmed by the occurrence of diphtheria in a vaccinated subject. The vaccination results seem better in persons who had been previously in contact with diphtheria bacilli. Therefore efficient preventive vaccination during epidemics results from an associated action of vaccine and occult infection.

Character of Parkinsonian Syndrome from Encephalitis.—Inoculation of an animal with some midbrain tissue obtained in necropsy on a subject, affected with postencephalitic parkinsonism for over three years, acted on the animal as an active and pathogenic virus. Harvier considers this a proof that postencephalitic parkinsonism is not a sequel, but a progressing disease.

Pneumothorax and Motherhood.—Pellé observed four cases of normal pregnancy in tuberculous women treated by artificial pneumothorax. Only in one instance did abortion occur, in the fifth month of pregnancy. No aggravation of the tuberculous process was noted during or after pregnancy. The suppressed functioning of the lung did not affect the pregnancy, labor or delivery. The infants were normal and healthy. The good condition of the women still persists from three to twelve months after childbirth. Childbirth may be without danger to women treated by pneumothorax.

Comptes Rendus de la Société de Biologie, Paris

92: 1341-1408 (May 22) 1925. Partial Index

*Immunity from Killed Vaccine Virus. M. Belin.—p. 1344.
Conservation of Tubercle Bacillus. F. de Potter.—p. 1346.
"Chemo-Vaccine Therapy." G. D. Belonovsky.—p. 1354.
*Insulin in Diabetic Retinitis. Chauffard et al.—p. 1356.
*Experimental Edema. M. Labbé et al.—p. 1359.
Ammonia and the Acidity of the Urine. R. Rafflin.—p. 1361.
*Heating and Metabolism. Delcourt-Bernard and Mayer.—p. 1364.
*Pathogenesis of Mumps. Y. Kermorgant.—p. 1370.
*Measuring the Sputum. E. Leuret et al.—p. 1375.
*The "Pressiophone." F. H. Harlé.—p. 1377.
*Tendon Reflexes. V. Pachon and C. Petiteau.—p. 1380.
*Dosage of Blood Oxygen. M. Nicloux and J. Roche.—p. 1393.
Mechanism of Muscular Contraction. A. Schwartz.—p. 1396.
*Roentgen Ray and Age. Ancel and Vintemberger.—p. 1401.
P. Vintemberger.—p. 1401.
*No Ammonia in Arterial Blood. G. Fontès and A. Yovanovitch.—p. 1406.

Immunity from Killed Vaccine Virus.—Belin's experiments on guinea-pigs showed that pronounced immunity from inoculation with vaccine virus can be realized with virus killed by heating to 60 C., given by intradermal injection. Saprophyte bacteria did not seem to interfere with the process of immunization.

Insulin Treatment of Diabetic Retinitis.—Chauffard, Grigaut and Nida observed a case of Hirschberg's "central punctate retinitis," in a man, aged 68. The affection was connected with diabetes, but not associated with arterial hypertension, or renal insufficiency. Treatment with insulin resulted in immediate improvement. The fact is ascribed to the influence of insulin on metabolism of fats, since the white spots in the fundus oculi diminished simultaneously with the reduction of the fats in the blood. Evidently insulin acts not only on the blood lipoids, but also on the lipoids in the tissues.

Mechanism of Experimental Edema.—Labbé, Violle and Lelièvre treated in vitro the gastrocnemius muscle of a frog with plasma from subjects with edema. This entailed infiltration of the intermuscular connective tissue, and a subsequent veritable edema. They conclude, contrary to Fischer's theory, that effusion of liquid into intercellular spaces occurs without preliminary swelling of cells.

Influence of Heat on Metabolism.—Forty tests made by Delcourt-Bernard and Mayer demonstrated that brief exposure to slight heat does not usually induce immediate changes in the respiratory metabolism. In rare cases the exposure may decrease oxidation, while short exposure to cold may, in certain subjects, exaggerate the oxidations.

Rôle of Spirochete in Etiology of Mumps.—Kermorgant made his research with secretions taken from the mouth and pharynx of patients in the first stage of the disease. Injection of 0.1 c.c. of concentrated virus (by centrifuge) into one parotid gland caused in three monkeys a bilateral parotitis, and in the fourth multiple localizations of the infection (affection of submaxillary and lacrimal glands, meningeal reaction). A spirochete was always present in the secretion used for inoculation, and in the glands of animals thus injected. Bacteriological investigation showed that filtrable forms of the spirochete are identical with Wollstein's filtrable mumps virus.

Technic for Measuring Sputum Volume.—Leuret, Lamothe and Lozach detail the procedure consisting in mixing sodium metaphosphate with hydrochloric acid in order to obtain metaphosphoric acid, a reagent for all the proteins in the sputum. The method, they say, is easy and exact.

Apparatus for Auscultation of Arterial Pressure.—Harlé describes his apparatus, composed of stethoscope and manometer. He calls it the "Pressiophone."

Location of Sensibility Causing Tendon Reflexes.—Pachon and Petiteau's investigation in dogs indicated that sensibility to tension, controlling tendon reflexes, is located in the aponeuroses and tendons, and not in muscular fibers.

Technic for Determination of Blood Oxygen.—Nicloux and Roche demonstrate their method and the simple apparatus. They affirm that the accuracy of the findings is quite satisfactory.

Effect of Roentgen Ray and Age on Hen's Eggs.—Ancel and Vintemberger noted that cellular changes, provoked in a hen's egg by roentgen rays, are identical with those from senescence. The first acts rapidly, the second slowly.

Probable Absence of Ammonia in Arterial Blood.—Fontès and Yovanovitch found no ammonia in the fresh arterial blood of a dog. Consequently, they say, urea is not formed of ammonium salts. The origin of urinary ammonium seems to be in the kidney.

Journal de Chirurgie, Paris

25: 513-632 (May) 1925

*Treatment in Duodenal Ulcer. M. B. Schiassi.—p. 513.
*Acute Hip Joint Disease. Curtillet and Tillier.—p. 524.

Treatment of Duodenal Ulcer.—Schiassi aims to deprive the duodenum of its sympathetic innervation by cutting the six sympathetic fibers and the parasympathetic on the pylorus region, and making a long incision below to reach the rear through the omentum. In eight cases the resection of the nerves was all that was necessary; in fifteen he supplemented this with a gastro-enterostomy. The outcome has confirmed, he says, that this is the best and most effectual treatment for duodenal ulcer.

Treatment of Acute Disease of Hip Joint.—Curtillet and Tillier extol the advantages of vertical, "zenith," extension of the leg, suspended from a frame. This insures perfect drainage; suppresses all pain in moving the patient or applying dressings; prevents soiling of the dressings, and danger of bed sores, and of pathologic luxation. There is no danger of ankylosis as the extension is not continued long enough.

Médecine, Paris

6: 573-662 (May) 1925

The Tuberculosis Problem. F. Bezançon.—p. 573.
Familial Tuberculosis. F. Bezançon and P. Braun.—p. 585.
Rest in Treatment of Tuberculosis. F. Bezançon and P. Braun.—p. 593.
Review of Mollgaard's Report. Bezançon and Caublot.—p. 610.
Stovarsol in Bacillary Enteritis and Diarrhea in Tuberculosis. L. Bernard et al.—p. 622.
Dysphagia in Tuberculous Laryngitis. Moulonguet.—p. 624.
Ultraviolet Rays in Prophylaxis and Treatment of Tuberculosis. M. P. Weil.—p. 628.
Cod Liver Oil in Tuberculosis. E. Etchégoin and A. Jacquelin.—p. 639.
Tincture of Garlic as Expectorant. Brodiez.—p. 652.

Paris Médical

55: 529-544 (June 13) 1925

Physiologic Effects from Light Rays. C. Sonne.—p. 529.
"Classification" of Multiple Exostoses. A. Leri and A. Linossier.—p. 535.

55: 545-572 (June 20) 1925

Gynecology in 1925. L. Houdard.—p. 545.
*Roentgenotherapy and Ovarian Cysts. J. L. Faure.—p. 551.
Case of Chorio Epithelioma. De Rouville and Madon.—p. 553.
*Course of Uterine Polyps. R. Princeteau.—p. 555.
Obstetrics in 1925. J. Coll de Carrera.—p. 556.
Therapeutic Abortion. A. Fruhinsholz.—p. 561.
*Arsenical Treatment of Puerperal Infection. M. Rivière.—p. 564.
*Vaccine-Serotherapy in Puerperal Septicemia. Levy-Solal and Leloup.—p. 568.

Danger from Roentgen Rays in Cases of Ovarian Cysts.—Faure observed several cases of ovarian cysts, diagnosed as uterine fibroma, which underwent malignant degeneration after exposure to roentgen rays. He emphasizes that roentgen treatment should be applied only when a cyst is absolutely excluded.

Degeneration of Uterine Polyps into Cancer.—Referring to his two observations, Princeteau affirms that mucous and fibrous polyps may coexist with other affections of the uterus, or degenerate into cancer. Therefore exploratory curettage with microscopic examination is indispensable in cases of uterine polyps.

Arsenicals in Treatment of Puerperal Infection.—With the treatment used by Rivière during the last sixteen months, no death occurred in fifty-six cases of puerperal septicemia, while in the same time six fatalities occurred among thirty patients otherwise treated. In several instances fever subsided within three or four days, after one or two injections; in others from five to fourteen days. Sulpharsphenamin was given subcutaneously in the dose of 0.12 gm.; in certain cases five or six injections (at one day intervals) of 0.18 gm. were needed. Intravenous injections may be preferred in grave cases of septicemia. Six subcutaneous injections of 0.12 gm. of sulpharsphenamin (with daily intervals) proved successful also in a case of phlegmasia alba dolens.

Specific Vaccine and Serum in Treatment of Puerperal Septicemia.—Levy-Solal and Leloup use an iodized vaccine, prepared with highly virulent cultures of streptococci from puerperal septicemia, in prophylaxis and in mild puerperal septicemia. In four severe cases injections of blood from vaccinated subjects were given. From one to eight injections of 20-50 c.c. of blood resulted in recovery of the patients. Transfusion of blood from a vaccinated subject was effectual in their fifth case of septicemia, accompanied by anemia. The injections were made intramuscularly in the thigh. The husband was vaccinated for the purpose in two cases.

Presse Médicale, Paris

33: 761-784 (June 10) 1925

Fate of Vein After Obliteration. L. Binet and J. Verne.—p. 761.
Vernes and Wassermann Tests in Syphilis. A. Bergeron.—p. 762.
Oculocardiac Reflex in Respiratory Affections. J. Galup.—p. 765.
Acid-Base Balance. F. Coste.—p. 768.

33: 785-800 (June 13) 1925

*Physiology of Ovary. P. Bouin.—p. 785.
Cellular Permeability. H. Iscovesco.—p. 788.

Physiology of Ovary Outside of Pregnancy.—Analyzing recent work, Bouin concludes that the ovarian functioning is quite different in the follicle stage and in the ovum stage, since the hormones secreted by the two act successively, and in a different way. Therefore, it should be clinically established, whether insufficiency of the ovary is caused by a deranged functioning of the follicle or of the ovum.

33: 801-824 (June 17) 1925

*Etiology of Rickets. L. Blum, et al.—p. 801.
*Roentgen-Ray Treatment in Poliomyelitis. H. Bordier.—p. 802.
Drainage with Appendectomy. R. Bonneau.—p. 804.
*Posttyphoid Aortitis. C. Vasilesco-Popesco and G. Litarczek.—p. 806.
*Operation on Typhoid Perforations. Tasso-Asteriadès.—p. 808.
Acid-Base Balance. Cont'd. F. Coste.—p. 810.

Acidosis in Pathogenesis of Rickets.—Blum, Delaville and Van Caulaert reiterate that decrease of mineral matter in bone plays a *secondary rôle in the bone lesions of rickets.* The essential factor is the modification of the colloid reaction from acidosis. The latter may present excess of organic acids, as in diabetic acidosis, or a disturbed sodium-chlorin balance similar to that present in osteomalacia. Further research may show whether the acidosis is caused by faulty nourishment (fasting prevents or checks rickets) or by a deficient functioning of the liver and endocrine glands. Determination of acidosis may assist in clarifying a dubious diagnosis, as well as in prognosis. It shows also the effect of treatment. Calcium chlorid is contraindicated since it produces acidosis. The author's recent research showed that ultraviolet rays decrease acidosis and favor ossification. Sodium bicarbonate, mixed with potassium bicarbonate and calcium bicarbonate, may be tried to overcome the acidosis.

Roentgen Ray and Diathermy in Treatment of Poliomyelitis.—Within the last ten months Bordier treated five patients with the degeneration reaction present in the paralyzed muscles. Roentgen rays were combined with diathermy, if the limb was cool. The treatment started from fifteen to thirty days after defervescence; it resulted in an almost complete recovery of the patients. (Details of the treatment were given in a previous article, summarized June 20, 1925, p. 1965.)

Typhoid Septicemia Complicated by Ulcerous Aortitis.—Vasilesco-Popesco and *Litarczek describe* such a case occurring in a man, aged 48. A persistent septic condition (sixteen months) following typhoid fever, entailed an ulcerous aortitis with subsequent formation of aneurysm and rupture of the aneurysm afterward.

Operation for Posttyphoid Intestinal Perforations.—Operation done from one to six hours after perforation was followed by recovery of four patients. Ileocolostomy, resection or exteriorization of the perforated intestine, and incision of abscess were applied once. Laparatomy did not save the life of the fifth patient, who had general peritonitis. Ether or other preparations were used to disinfect the peritoneum.

Revue Médicale de la Suisse Romande, Geneva

45: 385-456 (June 15) 1925

Urinary Tract Infections in Infants and Children. M. Jaccottet.—p. 385.
Pain in Traumatism of Nape of Neck and Spinal Cord. F. Naville.—p. 418.
Unusual Localization of Tuberculosis. E. Thomas.—p. 425.
Progress in Auscultation in Tuberculosis. Burnand.—p. 431.

Schweizerische medizinische Wochenschrift, Basel

55: 469-528 (May 28) 1925. *Surgical Congress Number* (1924)

*Treatment of Furuncles on the Face. C. A. Perret.—p. 469.
Surgical Interventions on the Extremities. Steinmann.—p. 470.
*Premature Ossification of the Epiphyses. W. Odermatt.—p. 474.
*Surgery of Open Injuries of Brain Ventricles. Baumann.—p. 478.
*Air Embolism After Operations on the Chest. T. Naegeli.—p. 479.
*Regeneration Phenomena in Stomach Wall. T. Naegeli.—p. 481.
Pseudocholelithiasis and Blood Diseases. E. Bircher.—p. 482.
Age for Surgery of Cleft Palate. Hagenbach.—p. 487.
Bécart's Transfusion Syringe. H. C. Krafft.—p. 488.
Basal Metabolism in Goiter Patients. F. Merke.—p. 488.
Osteochondritis Dissecans of Elbow. A. Schirmer.—p. 489.
Screws for Subcapital Fracture of Neck of Femur. Hotz.—p. 490.
Anatomy of Vessels of Costal Cartilages C. Henschen.—p. 491.
Thrombosis and Embolism. K. Helly.—p. 492.
**Postoperative Thrombosis and Embolism.* F. de Quervain.—p. 497.
Idem. Meyer-Rüegg.—p. 505.
Surgery of Inflamed Varicose Veins. H. C. Krafft.—p. 513.
*Treatment of Postoperative Thrombophlebitis in Leg. Julliard.—p. 515
Prevention of Thrombosis. L. Gelpke.—p. 518.
Postoperative Blood Changes. Heusser.—p. 518.
Thrombosis and Embolism. T. Naegeli.—p. 520.
Roentgen Treatment of Cancer of Breast. G. Hotz.—p. 521.

Treatment of Furuncles on the Face.—Perret applies repeatedly on the furuncle one drop of phenol under slight pressure until it corrodes its way into the accumulation of pus.

Premature Ossification of the Epiphyses. — Odermatt describes a case of premature development, especially of the genitals, in a 4 year old boy.

Surgery of Open Injuries of Brain Ventricles.—Baumann's patient, a boy 10 years of age, is probably the first patient who ever recovered from tampon treatment of an open *wound of a brain ventricle.*

Air Embolism After Operations on the Chest.—Naegeli attributes to arterial air embolism the "reflex" convulsions and death observed after intrathoracic interventions. Bleeding indicates injury of a vessel and contraindicates continuation of the operation. Stimulation of the heart and inhalation of oxygen are advisable. Artificial respiration is contraindicated.

Regeneration Phenomena in Stomach Wall. — Naegeli excised an oval piece of the stomach wall in dogs and reimplanted it. All of the dogs survived. Adhesions of the omentum formed and the wound healed with a defect. Circular excisions were fatal.

Postoperative Thrombosis and Embolism.—Quervain publishes his statistics on postoperative embolism. Interventions on the prostate gave the highest percentage of this mishap (4.2 per cent. in 356 patients). Absolutely certain prevention has not been realized. Thrombosis of the saphenous vein is not very dangerous. He consented once to a herniotomy in a woman only on condition of preventive simultaneous resection of both varicose saphenous veins. The patient consented and died ten days after the operation from pulmonary embolism—perhaps just because of this attempt to prevent it.

Treatment of Postoperative Thrombophlebitis in Leg.—Julliard applies two or three leeches along the course of the femoral vein thrombosed and inflamed after an operation. He adds three new instances of success to the nineteen reported by Termier who proposed the treatment.

Prensa Médica Argentina, Buenos Aires

11: 1069-1100 (April 30) 1925

*Transient Cerebral Vasoconstriction. C. Lian and R. Barrieu.—p. 1069.
Clinical Study of Congenital Syphilis. J. L. Carrera.—p. 1078.
Uric Acid Output During Irradiation for Cancer. A. H. Roffo and H. de Giorgi.—p. 1089.

Transient Cerebral Symptoms in Hypertension.—Lian and Barrieu discuss what they call cerebral eclipses, the result of transient vascular spasm in the course of chronic hypertension. Actual hemiplegia for five minutes, transient amblyopia or amaurosis, aphasia, momentary loss of memory, are some of the forms of these eclipses. They call for amyl nitrite, or other vasodilating measures, but especially for strict dieting to reduce intake of proteins, water and salt. One or two days a month nothing but water should be allowed, with a purgative and small venesection, with digitalis alternating with theobromin in case the heart is weak. The prognosis of the eclipses themselves is favorable but they are a manifestation of the underlying tendency to vasoconstriction, the same as the hypertension itself.

11: 1101-1140 (May 10) 1925

*Sympathetic Origin of Vitiligo. M. R. Castex and A. F. Camauer.—p. 1101.
Sulphur Reaction in Cancer Urine. F. Kopatschek and J. Brinckmann.—p. 1108.
Recurring Eruption in Congenital Syphilis. R. O. Belgrano.—p. 1117.
*Autophoric Transplants. M. Fernandez.—p. 1118.
Action of Certain Metal Ions on Development of Tissues in Vitro. A. H. Roffo.—p. 1124.

Vitiligo as a Sympathetic Syndrome.—Among the arguments presented by Castex and Camauer to sustain the sympathetic origin of this dermatosis are its hereditary and symmetrical nature, its coexisting or alternating with other sympathetic disturbances (pruritus, fleeting edema, etc.) connection with emotional factors, and endocrine derangement and the frequent intestinal toxemia and history of syphilis and abuse of alcohol or tobacco.

Autophoric Transplants. — Fernandez summarizes the research at Vienna in the line of reimplantation of the eyes in vertebrates and of the heads of insects.

Revista de Medicina y Cirugía, Havana

30: 205-238 (April 10) 1925

*Early Detection of Leprosy. P. Ramos Baez.—p. 205.
The Indications for Forceps. J. M. Ramirez Olivella and J. Ortiz Pérez.—p. 219.
Bismuth in Treatment of the Eyes. J. Moron.—p. 227.

Early Diagnosis of Leprosy.—An eruption at the age of 7 was ascribed to a recurrence of measles, and pains in the joints at 12 and later were diagnosed as recurring acute febrile rheumatism. After marriage, symptoms of tuberculosis developed, with nodules in the skin from which the lepra bacillus was cultivated. The father had had a mild case of leprosy. He died from intercurrent disease when the patient was 7. The case confirms the contagiousness, the long latency, and the resemblance to tuberculosis in the early stages.

30: 239-267 (April 25) 1925

Fifty Years of Practice. Cabrera Saavedra.—p. 239.
Removal of Tuberculous Kidney at Age of 60. A. G. Casariego.—p. 257.
*Blindness from Arsenical Nitritoid Crisis. J. Ruiz Velasco.—p. 260.

Nitritoid Crisis with Grave Ocular Lesions.—Ruiz Velasco relates that an injection of neo-arsphenamin was given a young man to hasten the recovery of a corneal ulcer which had improved somewhat under two injections of milk. Four hours later a nitritoid crisis developed and in five days vision was reduced to bare perception of a strong light. The eyes were painful and glaucomatous. Degeneration is now evident; vision reduced to outlines.

Archiv für Gynäkologie, Berlin

124: 305-688 (June 3) 1925

Heterotopic Endometrial Hypertrophy of Epithelium in Female Genitals. E. Stübler and A. Haeuber.—p. 305.
*Dysmenorrhea of Mental Origin. W. Dick.—p. 345.
*Vaginal Leukorrhea. A. Landeker.—p. 367.
Hemophilia in Female Possible. H. W. Siemens.—p. 375.
Gynecologic Symptoms of Mental Origin. Walthard.—p. 381.
Vagina Dose in Radiotherapy. T. Brandt.—p. 449.
Metastatic Hystero-Adenosis. J. Halban.—p. 457.
*Lipoid Content in Ovary During Pregnancy. H. Eufinger and C. W. Bader.—p. 483.
*Chemical Changes in Placenta. E. Wehefritz.—p. 511.
*Turgidization of the Placenta. W. Koerting.—p. 525.
Physiology and Morphology of the Placenta. Richter.—p. 557.
*Protracted Pregnancy. R. Köhler.—p. 575.
*Residual Nitrogen in the Blood in Labor and Puerperium. O. Heesch.—p. 595.
*Roentgenstereoscopy of the Pelvis. Archangelski.—p. 606.
Closure of Mucosa Opening on Nidation of Human Ovum. Peters.—p. 625.
Ovarian Changes in Hydatidiform Mole. R. Schröder.—p. 654.
Ovarian Tumors. S. Kusuda.—p. 669.

Dysmenorrhea of Mental Origin and Treatment by Hypnosis.—Dick describes six cases successfully treated by this method. In one case kinked anteflexion, conical cervix and stenosis of the cervical canal suggested "mechanical" dysmenorrhea, yet complete and permanent recovery followed two applications of hypnosis. The Fliess intranasal method seems to him dependent on hypnosis. Atropin is often efficacious, probably from its specific action on the vagus. For most cases of dysmenorrhea he recommends psychotherapeutic measures applied by the gynecologist, who must have a thorough understanding of psychoneuroses and of the methods of psychanalysis, psychotherapy and therapeutic hypnosis.

Origin and Treatment of Vaginal Leukorrhea.—Landeker sprays ethyl chlorid into the vagina through the opaque glass speculum. By moving it back and forth the fluid is kept in contact with the entire vaginal canal one to two minutes, then the residue is sponged out, to protect the vulva. He considers the ethyl chlorid spray in the vagina as an ideal disinfectant. While the ethyl chlorid exerts its disinfecting power, there is also probably a simultaneous change in the metabolism of the affected tissue cells due to the pronounced stimulus from the cold.

Lipoid Content in Ovary and Atresia of Corpus Luteum in Pregnancy.—Eufinger and Bader state that the lipoid content of the corpus luteum gradually decreases during the pregnancy. Usually only traces are found in the graafian follicles in pregnancy. In the corpus luteum of pregnancy and in the follicles, esters of cholesterol and cholesterol-fatty acid mixtures predominate. In the puerperium the lipoid content rises rapidly. Unruptured corpora lutea from previous menstruations are regularly present till the middle of pregnancy or even to the end. Their abundant lipoid content consists of cholesterol-fatty acid mixtures, cholesterol-glycerol mixtures, and fatty acids and soaps. They conclude that these unruptured corpora lutea may be of greater functional importance than hitherto suspected.

Chemical Changes with Age in Human Placenta.—Wehefritz found that as the pregnancy progresses, the components of the protein molecule show changes in the content of solid substance. The lowest values appear in the youngest placentas. In the eighth month generally the regressive changes begin which lead to atrophy of the placenta from age. While the arginin decreases during pregnancy, the phosphorus and lipoid phosphorus increase. The rôle of these age changes in the induction of labor is difficult to determine.

Hydraulic Turgidization of the Placenta.—Koerting says that distending the placenta by injection of a fluid through the umbilical vein frequently makes the Credé expression and manual separation of the placenta unnecessary. The method is equally adaptable in general practice and in the clinic and should, he says, be taught in the obstetrics course. To obtain the full effect of the injection, expression should not precede it. Should the Credé intervention become necessary, the distention of the placenta improves conditions for it. With rupture of villi and consequent escape of the fluid the injection should not be repeated. With profuse hemorrhage and when the amount lost by earlier hemorrhages is not known this hydraulic method of placenta expulsion is contraindicated.

Induction of Labor in Protracted Pregnancy.—Köhler investigated 10,000 obstetrical cases and concludes that every case of pregnancy protracted beyond the calculated date of confinement calls for close observation of the relation between the size of the fetal head and the mother's pelvis, with particular attention to primiparas, especially elderly primiparas. If with the growth of the fetus a disproportion threatens, labor should be induced at once, in the interests of both mother and child, even though the pregnancy is but little prolonged. Protracted gestation is in itself no indication for the induction of labor if the fetus is not oversize.

Residual Nitrogen in Labor and Puerperium.—Heesch made 350 examinations by the Bang micromethod in thirty cases, normal or with eclampsia or pregnancy kidney. He affirms that determination of the residual nitrogen and urea aids in the differential diagnosis between pregnancy eclampsia and true uremia. Determination of uric acid, amino-acids and creatinin is not useful for this purpose. Early in the puerperium after subsidence of the eclampsia, many women, especially in grave cases, show a pronounced increase of the residual nitrogen. The determination of the residual nitrogen and urea must thus be made at the height of the affection; the findings during the puerperium, following the eclampsia, may prove misleading.

Stereoscopy in Obstetric Measurement of the Pelvis and Estimation of Size of Fetus.—Archangelski describes the roentgenstereograph and the roentgenstereometer, by which sharply defined representations of the pelvis and of the fetal head may be obtained, thus allowing exact measurements. Internal examinations can thus be avoided.

Beiträge zur klinischen Chirurgie, Berlin

133: 367-532 (March) 1925

*Autotransfusion in Ruptured Tubal Pregnancy. E. Hempel.—p. 367.
*Freezing a Trunk Nerve. A. Läwen.—p. 405.
*Surgical Treatment of Aneurysm in the Brain. M. Borchardt.—p. 429.
Insufficiency of Metatarsal Bones. W. Müller.—p. 452.
Necrosis of Ends of Second and Third Metatarsal Bones. E. Roesner and S. Weil.—p. 470.
*Pulsating Exophthalmos. G. Büttner.—p. 512.
Torsion of the Gallbladder. A. Sutter.—p. 519.

Ruptured Tubal Pregnancy.—Hempel states that 3 liters of blood is the average amount poured out into the abdominal cavity. This is an enormous loss in oxygen carriers, but reinfusion of the extravasated blood proved fatal in 1.6 per cent. of the 415 published instances of it, and severe reactions were observed in 5.3 per cent. The injury from it was explained by air or clot embolism; cardiovascular complications; too old or infected blood; too much or too little sodium citrate; chilling of the blood; kidney disease; the hemolysins and agglutinins formed in the abdominal cavity; the whipping of the blood or the early toxin of defibrinated blood in Freund's sense. In Hempel's latest series of twenty-six cases the reinfusion failed to save one patient, bleeding for two days. Only eight came to operation within twelve hours; eight between the twenty-fifth and thirty-sixth hour and three later than this. Up to 2,700 c.c. was reinfused and all recovered with the one exception. One presented transient hemoglobinuria. He regards the reinfusion as the main indication at first even before clamping the tube. He urges publication of the details of all deleterious reactions.

Freezing the Nerve Trunk.—Läwen freezes the nerve with a carbon dioxid apparatus and reports excellent results in nearly all of fifty-two cases: pain after amputations, stump neuromas, angiospasms, senile gangrene, leg ulcers and erythromelalgia.

Surgical Treatment of Aneurysm of the Brain.—Borchardt reports two cases and has collected nine from the records. Only two were saved but perfected technic will improve this record.

Pulsating Exophthalmos.—In Büttner's case in a young man, compression of the carotid arrested the murmur, and ligation of the internal carotid restored clinically normal conditions. The arteriovenous aneurysm involved this artery and the cavernous sinus. He regards ligation of the common carotid as too dangerous for the brain.

Deutsches Archiv für klinische Medizin, Leipzig

147: 129-256 (May) 1925

*Adhesive Pericarditis and the Apex Beat. H. Regelsberger.—p. 129.
*Serum Ions in Nephritis and Pneumonia. G. Ehrismann.—p. 147.
Roentgen Picture of Pulmonary Stenosis. S. Usumoto.—p. 159.
*Iodin Metabolism. W. H. Veil and A. Sturm.—p. 166.
Experimental Research on Meteorism. R. Schoen.—p. 224.

Adhesive Pericarditis and the Apex Beat.—Regelsberger made the diagnosis of pericardial adhesions, even in clinically doubtful cases, by using the graphic method. The diastolic bulging and systolic retraction of the apex region are characteristic. The diastolic bulging is an exaggeration of a wave occurring in normal tracings.

Serum Ions in Nephritis and Pneumonia.—Ehrismann's analysis shows marked variations of the inorganic content of the blood ("poikilionia") in various diseases. The serum from nephritis and pneumonia patients contains hitherto unknown anions. In other patients a comparison of the inorganic salts with the depression of the freezing point leads to the conclusion that there are numerous unknown anelectrolytes present.

Iodin Metabolism.—A shorter paper by the same authors was summarized in these columns, June 13, 1925, p. 1883.

Deutsche medizinische Wochenschrift, Berlin

51: 889-930 (May 29) 1925

Internal Medicine and Endocrines. Rosenow.—p. 889. Cont'd.
*Life Expectancy of Former Athletes. M. Hahn et al.—p. 892.
*Dangers of Occultism. W. Jacobi.—p. 894.
Surgery of Pulmonary Cancer. H. A. Grueter.—p. 896.
Universal Angiokeratosis. J. Weicksel.—p. 898.
Acute Anterior Poliomyelitis. S. Saenger.—p. 900.
*Syphilis—Jaundice—Arsphenamin. E. Bernheim.—p. 904.
Standard Examination of Blood in Lead Workers. Telcky.—p. 906.
Pulse Volume in Pregnancy and Puerperium. W. Haupt.—p. 907.
*Blood Counts in Influenza. H. H. Hess.—p. 908.
*Death After Irrigation of Pleura. Rosenstein.—p. 908.
Survey on Otology. M. Meyer.—p. 911.
The Law on Epidemics.—p. 913.
Drug Supplies for Social Insurance. K. Finkenrath.—p. 914.
"Tuberculosis Immunization with Killed Germs." H. Langer.—p. 915.
"Amplifying the Heart Sounds." G. Schwarz.—p. 915.
"Trypaflavin and Acriflavin."—p. 915.
Old Age Insurances of German Physicians. S. Alexander.—p. 915.

Condition and Life Expectation of Former Athletes.—Hahn, Herxheimer and Brose examined fifty men who had been prominent in various fields of athletics. Twenty-eight of them had passed their forty-fifth year. No signs of injury especially no arteriosclerosis were found. Only the aorta was broader.

Dangers of Occultism.—Jacobi reports on three cases of psychographic psychosis in persons believing in spirits. The condition is so typical that it constitutes a pathologic entity. The strained listening to the voices of spirits may be the provoking mechanism. He points out that similar epidemics of occultism occur always in times of distress. One hundred years ago, when people generally believed in individual existence after death, a similar wave occurred.

Syphilis-Jaundice-Arsphenamin. — Bernheim reports on a case of jaundice in an early stage of syphilis. The jaundice responded well to mercury but reappeared after a small dose of neoarsphenamin.

Blood Counts in Influenza.—Contrary to the previous epidemics the grippe patients in the last year presented according to Hess a shifting to the left of the neutrophils.

Death after Irrigation of Pleura with Methylene Blue.—Rosenstein used Torres' method of intrapleural injection of 200 c.c. of a 5 per cent. solution of methylene blue in a young girl with empyema. The patient died within 1½ hours. Animal experiments showed that 0.5 mg. of methylene blue are toxic and 5 mg. lethal for mice.

Jahrbuch für Kinderheilkunde, Berlin

108: 267-388 (May) 1925

*Neurosis of Vegetative System in Children. Feer.—p. 267.
*Transparency of Skull with Hydrocephalus. J. v. Bókay.—p. 282.
Hernia of the Lung. M. de Bruin, Jr.—p. 295.
Goat's Milk Anemia Not a Distinct Entity. H. Opitz.—p. 311.
*Urobilin in Feces of New-Born and Infants. Marheineke.—p. 326.
*Blood Examination in Whooping Cough in Infants. Lasch et al.—p. 337.

Methylene Blue Treatment of Malaria in Children. P. I. Pitschugin.—p. 347.
*Specificity of Convalescents' Serum in Scarlet Fever. P. Bode.—p. 354.
Fetal Peritonitis. H. Flesch.—p. 366.

Acrodynia.—Feer reports a case of "pink disease" in a child old enough to describe its symptoms. Severe trophic disturbances complicated the clinical picture, necrosis of the fingers, popliteal spaces and buccal mucosa. The disease occurs mostly in winter and spring. Prostration and itching are pronounced from the first. It seems to be a neurosis of the vegetative nervous system affecting young children. He protests against the term "acrodynia" but approves of the "six P's" title (pain, pink, peeling, prostration, paresthesia, perspiration). Unless soon fatal, the child recovers after a few months' course, as a rule.

Transparent Skull with Hydrocephalus.—Von Bokay reports four cases in which although the head was approximately or quite normal size, the skull was transparent throughout or at the back and sides. The areas over the distended ventricles were the thinnest portions, the brain being scarcely more than 1 cm. thick at this point. The embryonal fontanels were all open. In his total nine cases, the lumbar puncture fluid was under high pressure even with very slight hydrocephalus.

Urobilin in Stool of Infants.—Marheinecke found in seventy newly born and thirty-five older infants that the urobilin bodies do not appear in the stools until the end of the first month of life in normal conditions. Appearance before this, or disappearance after positive findings, points to disease of the liver. No connection between the character of the food and the urobilin could be discovered.

Blood in Whooping Cough.—Lasch and his co-workers regard the high leukocytosis and absolute lymphocytosis count as an index of the contagious phase. In six cases, when the blood count showed return to normal leukocytosis, they placed the children in contact with healthy infants, and although the six were still coughing severely, there was no contagion.

Convalescents' Serum in Scarlet Fever.—Bode declares that this serum is a powerful curative, capable of saving in the severest cases of toxic scarlet fever if given in the first three days of the disease in doses of 40-100 c.c. The intramuscular route is as effectual as the intravenous. The serum is effectual if drawn from the third to the end of the sixth week after the attack. The serum of persons whose scarlet fever dates from several months is less potent.

Klinische Wochenschrift, Berlin

4: 1049-1096 (May 28) 1925.

*The Tonsils. E. Nobel and A. F. Hecht.—p. 1049.
*The Thyroid and the Nervous System. A. Oswald.—p. 1053.
*Hypoglycemia. R. Priesel and R. Wagner.—p. 1055.
*Antigen from Acid-Fast Bacilli. Reiter and Ogawa.—p. 1057.
*The p_H of the Sputum. F. Hoff.—p. 1059.
Local Anesthetics on Mucous Membranes. Birkholz.—p. 1061.
*Grave Nose Bleed. C. Hirsch.—p. 1062.
Stimulation Treatment of Staphylococcus Infections and of Gonorrhea. M. Popper.—p. 1063.
*Therapeutic Value of Pneumencephalon. E. Trömner.—p. 1065.
The Blood During Drug Stimulation of Vagus. Dresel.—p. 1066.
*Increase in Liver Glycogen After Insulin. Frank et al.—p. 1067.
Digestion of Vegetable Cellulose. van der Reis and Gosmann.—p. 1068.
Local Anesthesia in Otorhinolaryngology. C. Hirsch.—p. 1068.
Inhalation Treatment. A. Muszkat.—p. 1072.
Excessive Mortality of Illegitimate Children. C. Wiese.—p. 1075.
Bill on Elementary Schools. R. Hirschfeld.—p. 1094.

The Tonsils.—Nobel and Hecht review the physiology and pathology of the tonsils. They are strictly opposed to extremely wide indications for tonsillectomy. Spontaneous regression in puberty is the rule. Tonsillectomy made after the fifth year diminishes the frequency of tonsillitis. In younger children the failures are frequent.

The Thyroid and the Nervous System.—Oswald attributes to the instability of the nervous system the degree of sensitiveness to administration of thyroid extracts. Tachycardia, nervousness, tremor or sweating has been produced by thyroid extracts experimentally only in fox terriers degenerated from inbreeding. He found that thyroid extract increases the action of pilocarpin, histamin and morphin. The bradycardia following an injection of pilocarpin is more pronounced and lasts longer under the influence of thyroid extracts. They sensitize the nervous system and the latter increases the action of the thyroid gland, which thus serves as an amplifier of the impulses. Thyroxin is not the full hormone because it does not act on the nerves regulating the blood circulation and on Auerbach's plexus. It is an artificial splitproduct. Only the thyroglobulin is, in his opinion, the true hormone of the thyroid.

Hypoglycemia.—Priesel and Wagner mention the case of a child with a tumor of the liver and other anomalies (including lipuria). The fasting sugar was 30 to 50 mg. per hundred c.c. of the child's blood, but no spasms occurred. The insulin hypoglycemia in a treated diabetic coma is characterized by irregularity of the pulse, normal breathing and rigidity of muscles. Grave hypoglycemic symptoms may start suddenly.

Antigen from Acid-Fast Bacilli and the Serum from Tuberculous Subjects.—Reiter and Ogawa compared antigens made from various acid-fast bacilli by extraction with tetralin, acetone and trichlorethylene with Wassermann's tuberculosis antigen. The results of the tests with the serums from normal, syphilitic and tuberculous subjects were similar, except for the lower specificity of these antigens. They were, however, able to absorb all the reacting tuberculous antibodies from the serum. The control absorption with colon bacilli failed. Alcoholic extracts (Nègre and Boquet) from acid-fast bacilli gave similar results but were still less specific.

The p_H of the Sputum.—Hoff determined the hydrogen ion concentration of the sputum. The reaction is always acid, especially in pulmonary tuberculosis, in which it seems to depend on the gravity of the process.

Grave Nosebleed.—Hirsch recommends electrocoagulation (with the diathermy apparatus) in treatment of grave epistaxis.

Therapeutic Value of Pneumencephalon.—Trömner recommends insufflation of air into the spinal canal in status epilepticus. He attributes the result to removal of the toxic cerebrospinal fluid. Although he had good results in one patient with general paralysis, he advises caution: other patients died.

Increase in Liver Glycogen After Insulin.—Frank, Hartmann and Nothmann injected small doses of insulin ($1/10$ unit) in rabbits fasting for four to six days. They found a distinct increase in glycogen in the liver. The contrary findings of other authors are due to spasms and the use of unphysiologic doses.

4: 1097-1144 (June 4) 1925

Syphilis, Paralysis, Tabes. K. Wilmanns.—p. 1097.
*Work and the Circulation. H. Eppinger et al.—p. 1101.
*Abortive Form of Bronzed Diabetes. D. van den Bergh.—p. 1106.
*Activation of Insulin. F. Bertram.—p. 1106.
*Itching and Skin Changes in Liver Disease. W. Brack.—p. 1109.
*Refractometry of Gastric Secretion. H. Fischer.—p. 1111.
Meinicke Turbidity Reaction. Evening and Rottmann.—p. 1114.
*Irradiated Milk in Treatment of Rickets. P. György.—p. 1118.
Pharmacology of Surviving Round Ligament. K. Junkmann and W. Stross.—p. 1119.
Treatment of Experimental Cancer. K. Vorlaender.—p. 1120.
Formaldehyd Gelatinization in Blood. G. Pfeffer.—p. 1121.
*Metabolism of Peptidases. H. Pfeiffer et al.—p. 1122.
Calcium Ions and Irritability of Nerves. H. Handovsky and C. C. Fung.—p. 1123.
Vaginal or Rectal Examination? W. Niderehe.—p. 1124.
Physiology of the Pituitary. K. Fromherz.—p. 1126.
Microsyringe. E. C. Smith.—p. 1143.
Test of Taste. W. Sternberg.—p. 1143.

Work and the Circulation.—Eppinger, Kisch and Schwarz made investigations on patients with heart affections. They assume an insufficiency of the peripheral circulation in those patients in whom exertion causes an abnormally high blood output from the heart, an impaired utilization of the oxyhemoglobin (measured by comparison of the oxygen in the arterial and venous blood) and a prolonged increase in oxygen consumption after the exertion.

Abortive Form of Bronzed Diabetes.—Bergh reports the history of five patients with pigmentation, moderate hyperglycemia, urobilinuria, leukopenia and relative lymphocytosis.

He regards them as instances of an attenuated and benign form of bronzed diabetes.

Activation of Insulin.—Bertram found an increased and protracted action of insulin when injecting it in a freshly prepared mixture with a casein solution. Separate injections or casein alone exerted no influence on the blood sugar curve.

Itching and Skin Changes in Liver Disease.—Brack believes that the alimentary hemoclastic crisis is the cause of itching in prurigo as well as in diseases of the liver. Peptone given one hour before the meals cures the itching. The beneficial action of liver extracts is simply due to their nonspecific content of peptones. Pilocarpin (5 drops of a 1 per cent. solution, three times a day) improved the itching in a patient with prurigo vulgaris.

Refractometry of Gastric Secretion.—Fischer concludes that the refractometric determination of the proteolytic power of the gastric contents is not a valuable addition to the clinical picture. The acidity is the most important factor.

Irradiated Milk Treatment of Rickets.—György irradiated olive oil, using a quartz lamp. After a short time the oil smelled like cod liver oil. The phenomenon did not appear if the oil had been previously boiled or if pure triolein was used. He also irradiated milk with artificial sunlight for thirty to sixty minutes before feeding it to children suffering from rickets. Out of eighteen patients, sixteen recovered within four to six weeks.

Peptidases in Blood and Urine.—Pfeiffer had found large amounts of a ferment splitting glycyl-tryptophan in anaphylactic shock, extensive burns and fever. He has continued, with Standenath and Weeber, this line of research. They found that infants and certain normal adults excrete the ferment by the urine. It seems that it originates in the colon. Epileptic patients usually excrete large amounts after their seizures. Before the attack the ferment is almost entirely absent from the urine, but is increased in the blood.

Monatsschrift für Kinderheilkunde, Leipzig

30: 193-377 (June and July) 1925

Problems of the Communal Pediatrist. T. Hoffa.—p. 218.
*Effect of Peppermint, Fennel and Chamomile Tea on Stomach and Intestinal Tract. W. Arnold.—p. 225.
Living Conditions of 321 Tuberculous in Remscheid. E. Aschenheim.—p. 233.
*Congenital Stridor. K. Benjamin.—p. 242.
*Pathogenesis of Carpopedal Spasm. O. Bossert.—p. 253.
*Significance of Heredity in Pediatric Clinic. K. Coerper.—p. 260.
*Children That Eat Poorly. S. Engel.—p. 270.
*Spastic Pylorus Stenosis in Infants. T. Hoffa.—p. 275.
Resorption and Elimination of Stain. S. Kaiser.—p. 288.
Meinicke Microreaction in Syphilis. E. Loewy.—p. 300.
Nevi in Children. E. Loewy.—p. 304.
*Charring of Fat and Digestion Lipemia. L. Mendel.—p. 308.
*Familial Scarlet Fever. S. Meyer and E. Burghard.—p. 313.
*Recurrent Umbilical Colic in Children. F. Pielsticker.—p. 367.

Tests of Effect of Peppermint, Fennel and Chamomile Tea on Stomach and Intestines.—Arnold confirms the effect generally attributed to these household remedies. Peppermint and fennel, especially the former, exert a paralyzing action on the stomach and are given for stomach colic and vomiting. All stimulate the intestine, particularly the large intestine, and may thus be useful in colics from spasms, in flatulence, and as a mild purgative in enteritis, peppermint being the most effective, chamomile the least (in the usual 5 per cent. infusion).

Origin and Treatment of Congenital Stridor.—Benjamin says that the usual infantile respiratory spasm may be temporarily arrested by pushing the lower jaw forward, by raising the floor of the mouth, and by pressing the tongue down, also by crying. These phenomena all lift the root of the tongue and the epiglottis. The sound of the stridor is due to the whirring of the free edges of the epiglottis, which in infants, because of the high larynx and the relative size of the tongue in a small space, is compressed and lies loosely over the glottis. Spontaneous recovery occurs as the lower jaw develops and the pharynx drops. The enlargement of the thymus common in congenital stridor is not a cause of the stenosis but may be considered a result, as venous hyperemia of the thoracic organs results from any obstacle in breathing.

Pathogenesis of Carpopedal Spasm.—Bossert's observations in children, mostly with latent hyperexcitability, showed that carpopedal spasms, with edema, may occur after sharp rises in weight. The manifestations may be produced in some children by sodium citrate.

Significance of Heredity in Pediatric Clinic.—During the last five years Coerper tested 16,000 school children and 8,000 infants and young children for morphologic peculiarities and variations in form. In infants and young children three fundamental psychophysical characteristics may be noted, namely, the instinct for food, the instinct for movement, and the instinct for care, and these are inherited. He believes that examination of a single characteristic has an interest only in the biology of heredity and no immediate clinical interest. The idea of degeneration, inferiority, and hereditary taint is inadmissible in the clinic because unscientific and should be supplanted by the idea of variability.

Children That Eat Poorly.—Of the 3, 4 and 5 year old children reported as refusing to take proper nourishment, a certain proportion may be disregarded, because they are expected to eat beyond their needs and naturally rebel. With the others the trouble often begins when soft foods are first given. Children of this type usually reject the sweet foods and prefer the highly seasoned. Engel calls it early maturing of taste. The neuropathic nature of the condition is undoubted. Other signs of psychopathy are frequently seen. Generally it is the only child who is affected. That these children often still have the bottle, probably morning and night, shows the faulty attitude of the parents. Training is foremost in treatment. A change is helpful. Children who at home refuse even fine food may eat readily elsewhere. The bottle should be forbidden at once. The food must be planned to appeal to the child's appetite without endangering his digestive organs. It is a mistake, he says, to force on these children, with nervous and mental instability, food which they dislike.

Operative Treatment of Spastic Pyloric Stenosis in Infants.—Hoffa advises internal treatment, according to Ibrahim, with careful avoidance of too many measures. If recovery does not follow in a comparatively short time, operation is indicated. He commends the Weber-Rammstedt operation particularly in the treatment of congenital pyloric spasm.

Roasting of Fat and Its Relation to Digestive Lipemia.—Mendel believes that this is of slight import for digestive lipemia.

Familial Scarlet Fever.—Meyer and Burghard report that study of tabulated cases of familial scarlet fever as well as of single cases has revealed a proportionately greater predisposition of boys to the grave forms of the disease.

The Liver in the Etiology of Recurrent Umbilical Colic in Children.—The hepatosis, Pielsticker says, to which this affection is due, is an extremely common concomitant manifestation of infectious processes of many kinds, and only in neuropathic children does it lead to umbilical colic.

Wiener klinische Wochenschrift, Vienna

38: 577-600 (May 28) 1925

*Sugar Value of Food. W. Falta.—p. 577.
*Vegetative System and Experimental Nephritis. L. Schönbauer and L. R. Whitaker.—p. 580.
Syphilis and Irritation. H. Krösl.—p. 582.
*Sulphur Baths. E. Maliwa.—p. 585.
"Exophthalmic Goiter." D. Adlersberg and O. Porges.—p. 587.
Sudden Death in Quarrel. Haberda.—p. 588.
Ulcer of Duodenum. Schütz.—p. 592.
Nutrition of the New-Born. A. Reuss. Supplement.—pp. 1-15.

Sugar Value of Food.—Falta figures 80 per cent. of the weight of proteins as a source of sugar, and does not take fat into account. He publishes experiments which show that in patients with a tendency to acidosis, proteins invite it. He believes that the theory of the antiketogenic ratio is due to the overlooking of cereal diets by the American authors.

Vegetative System and Experimental Nephritis.—Schönbauer and Whitaker extirpated in dogs one kidney and a third of the other. Only those animals in which they combined the operation with a decortication of the renal artery, survived for more than twelve days.

Sulphur Baths.—Maliwa attributes the action of sulphur hot springs to their hydrogen sulphid content. A bath of 250 liters from one Baden well contains 0.86 gm. of this gas. With addition of the bromid sulphid, the content is 1.6 gm.

Zeitschrift für Urologie, Leipzig

19: 401-480, 1925

Surgery of Seminal Vesicles and Ducts. R. Picker.—p. 401.
Syphilis of Seminal Vesicles. Frank.—p. 415.
Treatment of Gonorrheal Strictures of Urethra. V. J. Marselos.—p. 417.
Colorimetric Tests of Kidney Function. A. Cassuto.—p. 420.
Double Ureter and Double Kidney Pelvis. Haslinger.—p. 422.
Mechanism of Urine Elimination. K. Lion.—p. 428.
Origin of Pregnancy Nephritis. G. Armbruster.—p. 430.
Uremia in Idem. Idem.—p. 431.
Kidney Infarcts in the New-Born. Idem.—p. 433.
Treatment of Urethrorectal Fistula. J. J. Stutzin.—p. 435.
Operations on Single Kidneys. Siedner.—p. 442.
Single Kidney Located in Pelvis. J. Bitschai.—p. 446.
Nerves of Kidney Pelvis. Haebler.—p. 450.
Cysts of the Bladder. R. Schröder.—p. 450.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 2489-2604 (June 6) 1925

*Test for Urobilin. A. J. L. Terwen.—p. 2492.
*Urobilin as Index of Hemolysis. A. Lichtenstein.—p. 2508.
*Capillary Analysis of the Blood. E. Sluiter.—p. 2515.
*The Nervous System and Carbohydrate Metabolism. G. C. Bolten.—p. 2521.
*Pulmonary Edema. W. L. Pel —p. 2532.
Keratomalacia from One-Sided Diet. L. K. Wolff.—p. 2534.
Chronic Pigmented Urticaria in Boy. J. H. Broers.—p. 2535.
*History of Malaria in the Netherlands. N. H. Swellengrebel and P. J. J. Honig.—p. 2538.

Quantitative Colorimeter Test for Urobilin. — Terwen's technic shows in milligrams the urobilin in urine and feces. It is computed from the urobilinogen reduced in an alkaline medium. One unit of urobilinogen corresponds to 0.4 mg. of urobilin in 100 c.c. of fluid. The purity of urobilin can be determined by its reduction to urobilinogen under the iron salt he uses ($FeSO_4(NH_4)_2SO_46H_2O$). Ether dissolves the urobilinogen while the urobilin precipitates out. This ether extract of urobilinogen can be used also with the Ehrlich-Neubauer aldehyd urine test and the Ehrlich-Thomas test.

Connection Between Production of Urobilin and Destruction of Blood.—Lichtenstein found with Terwen's method (which he styles "the simplest and the most accurate of all") that the normal daily output of urobilin never exceeds 1 mg. in the urine and 135 to 150 mg. in the stools. An index of the hemoglobin metabolism can be obtained by comparing the number of erythrocytes, the hemoglobin percentage, the color index, the number of erythrocytes that take the vital stain, the findings with the van den Bergh test, and the amount of urobilin excreted daily. The last three factors throw light on the intensity of the process of blood destruction; the first three on both blood destruction and blood regeneration processes.

Capillary Analysis of Blood.—Sluiter's illustrations confirm his statements on the difference in different species between the height to which the fluid climbs when a strip of filter paper is suspended in blood. He thinks this method might be utilized in clinical differentiation.

The Vegetative Nervous System and Carbohydrate Metabolism.—Bolten injected himself with various drugs after ingestion of 50 gm. of glucose, and recorded the effect on the sugar content of the blood (normal). The action of epinephrin was almost exactly the same by the mouth as by subcutaneous injection if the stomach was empty. Thyroid extract did not seem to influence the blood sugar content, while there was very little difference between the action of atropin, pilocarpin and cholin in this respect.

Pulmonary Edema.—Pel's patient was a supposedly healthy bride of 69. The ninety minute attack of pulmonary edema occurred during the first night of the honeymoon, and subsided without a trace.

History of Malaria in the Netherlands.—This article was written by request of the health board of the League of Nations. The Netherlands are said to have been the seat of the most malignant endemic malaria in Europe, outside of Italy, but evidence is here presented that this grave character was due to intercurrent diseases which are now less common.

Acta Dermato-Venereologica, Stockholm

6: 131-280 (June) 1925

Mucosa Changes in Darier's Disease. Brünauer.—p. 131.
*Experimental Production of Cancer with Indol. F. Fischl.—p. 180.
Syphilitic Melanoderma and Leukoderma. Almkvist.—p. 189.
Mycosis Fungoides of Skin and Internal Organs. S. R. Brünauer.—p. 198.
True Locomotor Ataxia Associated with Active Tertiary Skin Syphilis. B. B. Beeson.—p. 241.
Purulent Orchitis and Epididymitis from Colon Bacillus Infection. F. Grøn and T. Thjøtta.—p. 247.
Erythrodermia and Keratodermia Variabilis. S. Mendes da Costa.—p. 255.
Gonococcus Meningitis and Purpura. E. Bruusgaard and T. Thjøtta.—p. 262.

Experiments on Production of Cancer with Indol.—Stöber and Wacker reported that the subcutaneous injection of a 5 per cent. emulsion of indol in rabbit fat into the rabbit ear under pressure, repeated after two or three days, resulted after fourteen days in pea-sized tumors which microscopic examination showed to be neoformations resembling squamous-celled epithelioma. Fischl's experiments by the same technic, supplemented by injection of rabbit fat alone into the other ear, produced lumps in both ears after fourteen days, with no signs of cancer on histologic examination. Further experiments on mice by rubbing 5 per cent. indol ointment into the back for two or three minutes at the time, continued for half a year, under observation for a year, caused no pathologic changes. Three to eight minutes after the intracutaneous injection of 0.05 gm. of indol in oil emulsion in the back in four mice, grave clonic spasms occurred, with death in about three hours. He concludes that indol is not a cancer-producing substance. The resulting epithelial cysts in the subcutis, with occasional acanthosis and pronounced hyperkeratosis, he attributes to mechanical causes. Indol, he says, is a poison causing convulsions.

Acta Medica Scandinavica, Copenhagen

Supplement X, pp. 1-207. English Edition

*Sciatica or Myopathia e Labore of the Posterior Region of the Leg. J. Helweg.—p. 1.

Sciatica.—Helweg believes that the pain along the back of the leg is in the vast majority of cases due to muscular disease, not to a lesion of the sciatic nerve. This muscular affection he considers the result of excessive use of the muscles in question. He therefore calls it "myopathia e labore."

Supplement XI, pp. 1-704. German Edition

*Research on Paroxysmal Hemoglobinuria. E. B. Salén.—p. 1.

Research on Paroxysmal Hemoglobinuria.—Salén's investigation supports the view that this affection is a disturbance of the normal blood metabolism. It seems to him probable that it depends chiefly or exclusively on the mechanism which normally causes the removal of the cells from the blood vessels or gives the first impulse to their removal. He discusses in particular hemoglobinuria from chilling.

Hospitalstidende, Copenhagen

68: 385-408 (April 30) 1925

*Perforated Gastric and Duodenal Ulcer. H. Abrahamsen.—p. 385. Conc'n.
Epidemic Encephalitis and Epidemic Hiccup, also Influenza and Acute Anterior Poliomyelitis in Denmark. A. V. Neel.—p. 392. Conc'n.—p. 409.

Perforated Gastric and Duodenal Ulcer. — Abrahamsen's reexamination of 57 patients, 28 operated on for perforated gastric ulcer, 28 for perforated duodenal ulcer, revealed good results in 29; fair in 15; poor in 12. A second intervention, indicated by hemorrhages, pain, and stenosis, had been necessary in 11 cases, 4 with gastric, 7 with duodenal ulcer. Complete recovery followed in 5 of the 9 cases of indolent gastric ulcer. To determine in advance on gastro-enterostomy or resection is impossible he says. He confines himself to simple suture, supplemented by gastroenterostomy if it is evident that stenosis will occur (Moynihan). He emphasizes that the improved results in perforated gastric and duodenal ulcer are due primarily to two factors, immediate transference of the patient to the hospital and surgical intervention without delay by definite method.

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THE OVARIAN FOLLICULAR HORMONE

ITS DISTRIBUTION IN HUMAN GENITAL TISSUES [*]

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In earlier work[1] it has been demonstrated that lipoid extracts of the contents of ovarian follicles quite completely substitute for certain phases of the internal secretion of the ovaries. This was done by injecting extracts of material from pig ovaries into rats and mice from which the ovaries had previously been removed. The action of the follicular hormone includes the production of striking growth in the female genital organs. The rapidity of this growth in the test animals is astonishing. An entirely new epithelial wall is produced in the vagina in forty-eight hours. This involves the addition of more than twelve layers of new cells (Fig. 2, in which *A*, the control animal, is to be compared with B and C, injected animals). In the uterus a corresponding growth occurs and the secretion of the glands, which is retained in these animals by cervical constriction, greatly distends the uterus (Fig. 3). The large numbers of dividing cells found in both the surface epithelium and the glands also indicate the rapidity of the growth processes in these tissues (Fig. 4). These growth and secretion processes in the genital tract induced by injections of active extracts into spayed rats and mice are equal to the maximum conditions normally attained in these animals under the secretion of their own ovaries.[2]

The literature on injections of ovarian extracts has recently been fully reviewed by Novak,[3] Marshall,[4] Frank,[5] Corner,[6] Carlson[7] and Lisser.[8] Therefore, it does not seem necessary for us to emphasize our point of view further than has already been done.[1] Recently Courrier,[9] Papanicolaou,[10] and Murphey and his collaborators[11] have published preliminary reports of important work on tests of ovarian extracts.

A DECISIVE PHYSIOLOGIC TEST FOR ACTIVITY

As the growth induced by injected hormone proceeds in the genital tract there is a definite change in the types of cells which are sloughed off from the vaginal wall into the lumen (Fig. 1). By identification of these cells in stained smear preparations, the effect of injected extracts can be followed accurately in the living animals. Leukocytes in smears from test animals indicate slow atrophy of the genital tract of the spayed animal. As growth is induced by injected extracts the leukocytes disappear, and when a certain number of new layers of epithelial cells have been added to the vaginal wall, cornification sets in and only flat epithelial scales are found in the smear. For our test purposes an extract to be considered active must induce sufficient growth to cause cornification.

THE RAT UNIT

The use of this maximum reaction of spayed rats to test extracts made up in graded series of dilutions furnishes a method of measuring in rat units the amount of hormone in different genital tissues. The rat unit is defined as the highest dilution of an extract which, when given to a mature spayed rat in three injections at four hour intervals during the first day, will return a positive test on the morning of the third day.

Maximum yields from extracts of contents of large follicles from pig ovaries range above 2,100 rat units per kilogram. In other words, 0.5 c.c. of liquor from large follicles usually contains enough hormone to return a positive test. Smaller yields from the contents of medium and small follicles from pig ovaries indicate that the concentration of this hormone increases with the growth of the follicles.

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[*] From the Department of Anatomy, University of Missouri School of Medicine, Columbia; the Henry Ford Hospital, Detroit, and the St. Louis University School of Medicine, St. Louis.

[*] Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

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DISTRIBUTION IN ANIMALS OF DIFFERENT SPECIES

Next, extracts from follicles of several species of animals were tested to establish the expected nonspecificity of this material. To date, positive tests have been returned from extracts of follicles from pigs, cows, sheep, hens and human beings.

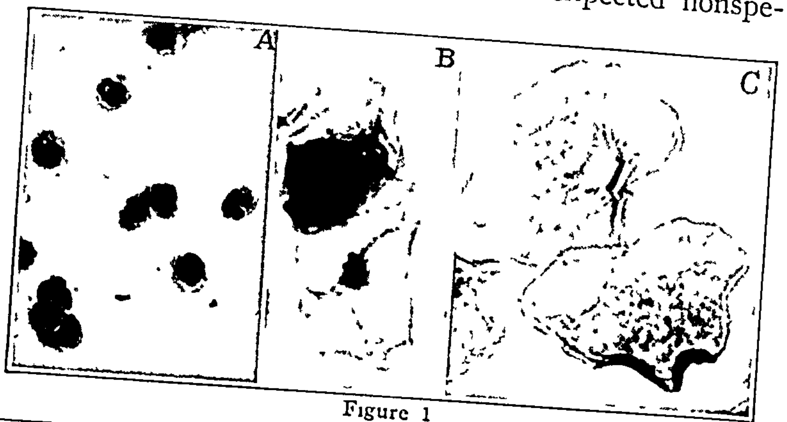

Figure 1

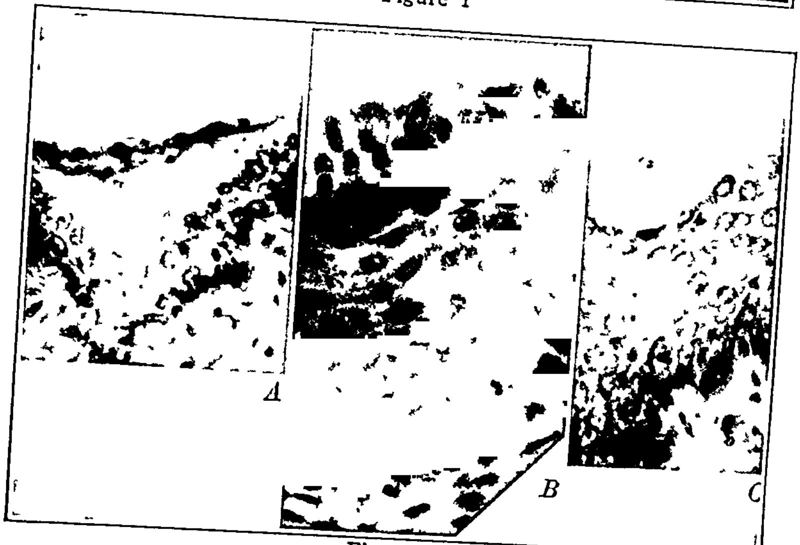

Figure 2

Fig. 1.—Predominating types of cells in smear preparations of the superficial cells of the vaginal walls, which are represented in Figure 2: *A*, leukocytes of the noninjected control indicating slow atrophy of the vaginal wall; *B*, nucleated epithelial cells at the thirty six hour stage; *C*, non-nucleated, cornified scales forty eight hours after the first of a series of injections The change from Type *A* to Type *C* on the third day of the experiment indicates a positive test. One control smear and four test smears are usually made during the course of the test (from three to four days).

Fig 2—Sections of the vaginal walls of test rats: *A*, noninjected control from eight to ten days after double ovariectomy, two to three layered epithelium infiltrated with leukocytes, which migrate through into the lumen; *B*, from test animal thirty six hours after the first of three injections given in the first twelve hours, fourteen to sixteen layered epithelium, the outer two or three layers of light staining cells represent ing the old vaginal wall before new growth was induced by injections (note dividing cell in right center), *C*, from test animal forty eight hours after beginning injections; the old vaginal wall has been sloughed into the lumen and a cornified layer is now superficially placed

THE CORPUS LUTEUM

The next problem was to determine whether the corpus luteum, which develops in the ruptured follicle, continues to secrete this hormone, or whether its secretion ceases after ovulation. Corpora lutea of both estrus and pregnancy from pig ovaries grouped according to their stage of development were carefully excised, and extracts of amounts varying from twenty to several hundred grams tested. To date, more than thirty tests of different preparations of fully formed corpora have been negative.[12] More than twelve tests of separate preparations of corpora from cows have also been negative.

HUMAN OVARIAN TISSUES

Cystic Follicles.—Our first tests of human ovarian tissues were made on extracts of material aspirated from abnormally large follicular cysts after removal of ovaries at operation.[13]

Normal Follicles.—The difficulty of obtaining normal material from the follicles of human ovaries is readily appreciated. Since the material from human ovaries is selected from cases at operations, the supply is necessarily very limited. It is evident that the causes which would lead to operative exposure of the ovaries would often be associated with pathologic conditions, so that the ovaries could not be considered normal. It has seemed important, therefore, to limit the material described in the following sections to specimens that had all gross appearances of being normal:

The follicles chosen for removal of fluid were always 1 cm. or less in diameter. The contents were aspirated into a Luer syringe, the needle being inserted to one side of the follicle so as to pass through a small portion of ovarian tissues, thus preventing the loss of fluid that occurs when puncture is made directly through the thin follicle wall (Fig. 5). The same needle was used to aspirate the contents of all follicles found in the two ovaries. This fluid appeared clear, showing that it was free from blood. An equal volume of 95 per cent. alcohol was immediately added, whereupon a white, curdly precipitate settled out. In alcoholic solution this material may be stored for subsequent extraction.

It is well established that ovarian structures, both follicles and corpora lutea, are transient structures quickly replaced after removal by compensatory growth in the remaining follicles. Furthermore, there is no bleeding or other evidence of trauma to the ovaries in needle puncture for removal of follicular fluid as described above. Consequently, the removal of this material from the ovaries seems justifiable to us. In no case have the ovaries been removed for purely experimental purposes.

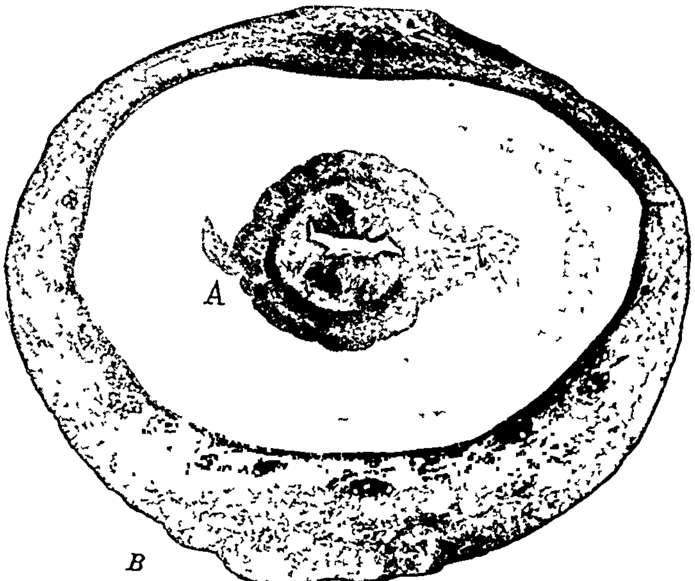

Fig 3.—Cross sections of uterine cornua of test rats: *A*, from the noninjected control, *B*, from an animal returning a positive test forty eight hours after the first of a series of injections.

The first two specimens of human liquor folliculi tested, each 0.5 c.c. in volume, failed to give positive reactions. A third specimen of 3 c.c. was positive and when tested in dilution proved to contain 1.3 rat units of hormone. A fourth specimen consisting of 11.5 c.c. of follicular contents aspirated from several patients over a period of several months was tested as follows: The residue from extraction with lipoid solvents was dissolved in 6 c.c. of mazola oil, which was then made up in graded dilutions. Each dilution was made up to a volume of 3 c.c., and 1 c.c. injections were given to test animals at 8 a. m., 1 p. m. and 5 p. m. In this way the greatest dilution giving a positive test was determined. It was found that 0.07 c.c. of the original 6 c.c. of oil soluble extract returned a positive test in the spayed mature rat. This amounts to only six drops of oil solution, or to 0.14 c.c. of the original follicular fluid. Figuring from these results gives a determination of more than 7 rat units per cubic centimeter of original material, or 7,390 units per kilogram.

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[12] We are indebted to C G Johnson and V L Gould in work as yet unpublished for some of these tests Dr Doisy placed in the scientific exhibit some specimens to show the effects of water soluble commercial preparations and his lipoid extracts of follicular contents and corpora lutea from pigs

[13] These data will be presented in a later paper.

The Corpus Luteum.[14]—The corpora lutea chosen for study were all from ovaries that were apparently normal. A careful examination was made of both ovaries and only the most recent corpus removed; consequently, specimens of this group were less than 1 month old. They were excised at varying stages in the menstrual cycle and, in cases in which several were extracted together, they were grouped according to the number of days following the onset of menstruation.

A small incision was made through the thinned out capsule and the corpus cleanly enucleated without injury to any of the surrounding follicles (Fig. 6). In cases in which the corpus had not become organized into a solid tissue mass, care was taken to preserve the fluid in the "central lake." After removal, the capsule collapsed into the cavity that had been occupied by the corpus. In most instances it was not necessary to close this, but in some cases the raw area was covered over by a few sutures.

The first corpus luteum to be tested displaced only 1.4 c.c. of fluid. It was excised two weeks following the onset of menstruation (Fig. 7). The extract in full strength returned a positive test, but in 1:3 dilution proved negative. Since this time we have tested extracts of corpora as listed in Table 1, the specimens being tested singly or in small groups according to their time relation in the menstrual cycle (Figs. 7, 8, 9 and 10). The majority of corpora[15] so far tested have contained some of the follicular hormone. The number of rat units indicated by quantitative analyses,[16] however, is less than our best results from tests of follicular fluid.

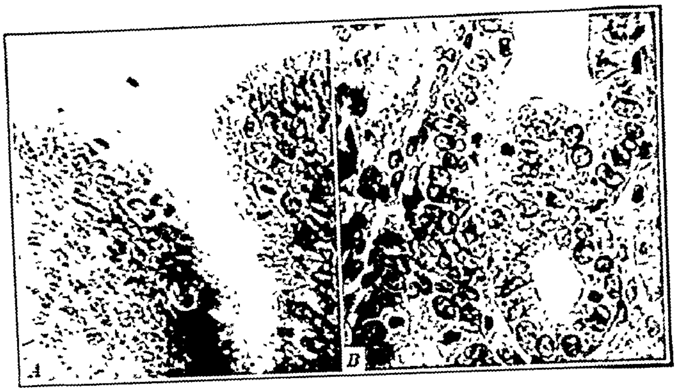

Fig. 4.—Oil immersion fields to show the extreme hyperplasia of the uterus of a test rat forty-four hours after the first of a series of injections: *A*, surface epithelium with six cells in mitotic division; *B*, fundus of a gland from same uterus with five dividing cells.

Table 1.—*Tests of Human Corpora Lutea for Presence of the Follicular Hormone*

Extract No.	Specimen	History or Description	Volume of Specimen, C.c	Equivalent of Material Tested, C.c.	Result	Yield in Rat Units per C.c. of Tissue
57	Corpus luteum.......	1st week post menstrua..........	1.0	0.7	—	<1.3
54	Corpus luteum.......	2d week post menstrua..........	1.4	0.9 0.2	+ -	>1.0 <4.3
5 C	Corpus luteum.......	2 weeks post menstrua..........	1.4	0 9 0.3	+ —	>1.0 <3.3
8 C	Several corpora......	Between menstrual periods, one corpus after recent ovulation..	5.0	3.3 0.08	+ —	>3.3 <12.5
6 C	Corpus luteum.......	3 weeks post menstrua..........	5.0	3.3	+	>0.3
7 C	Corpus luteum.......	3 weeks post menstrua..........	2.6	1.7	+	>0.5
52	Five corpora.........	3d week post menstrua..........	9.0	0.2 0.18	+ —	>3.7 <4.4
51	Four corpora........	4th week post menstrua..........	8.0	0.5 0.3 0.2	+ ± —	>2.0 3.3 <4.0
53	Corpus luteum.......	24 days post menstrua (fluid center)..........	3.3	1.9 0.6 0.3	+ ± —	>0.5 1.5 <3.3
9 C	Corpus luteum.......	25 days post menstrua..........	2.0	1.3 0.4	+ —	>0.7 <2.2
10 C	Corpus luteum.......	Center contained clear fluid..........	2.0	1.3	—	<0.7
204 C	Two corpora.........	No history..........	3.5	2 3 0.7	+ —	>0.4 <1.2
56	Several corpora......	No history..........	4.0	2.4 0.8	+ —	>0.4 <1.2
11 C	Corpus luteum.......	1st month of pregnancy..........	1.0	0.6 0.2	— —	>1.5 <4.5
13 C	Corpus luteum.......	2d month of pregnancy..........	1.0	0.6	±	1.5
14 C	Corpus luteum.......	3d month of pregnancy (yellow luteal rim, white coagulum in center)	1.5	1 0 0.3	+ —	>0.9 <2.8

These results indicate that there is a functional difference in corpora lutea in different species of animals; that the human corpus luteum, unlike that of the pig and cow,[17] continues to secrete the follicular hormone in appreciable amounts for a considerable period following ovulation. As indicated from the quantitative

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[14] The corpus formed in the absence of pregnancy.

[15] Allen, Edgar; and Doisy, E. A.: Continuation of Secretion of the Ovarian Follicular Hormone by the Human Corpus Luteum, Proc. Soc. Exper. Biol. & Med. 22: 303 (Feb.) 1925.

[16] Nos. 52 and 51 have given the highest yields; these results are the most significant because of the quantity of material extracted.

[17] These animals supply the material from which commercial corpus luteum extracts are manufactured.

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tests, however, this secretory function of the human corpus is probably waning.

It seems probable to us that this continued secretion of the follicular hormone by the corpus in woman may be one of the determining factors in the menstrual hemorrhages.[18]

The Corpus Luteum of Pregnancy.—Positive tests have been returned from each of two corpora removed during the first and third months of pregnancy (Fig. 11; Table 1, 11 C and 14 C). In the first case it was of course not known at the time of excision of the corpus that the patient was pregnant. The corpus was removed on the twentieth day after the onset of menstruation, the pregnancy not being discovered until two months later. There was no history of copulation following the operation. The gestation period of 272 days was normal throughout. The corpus taken during the third month was removed because of the serious condition of the patient in the hope that it would terminate the pregnancy according to the theory that the corpus is necessary during early gestation. The amount of hormone found is indicated in the table. In the case of the corpus removed during the second month of pregnancy, an accidental loss of a large part of the extract made a decisive test impossible. In spite of this misfortune, some growth was indicated in the smears, although a definite positive test was not returned. This patient later gave birth to a normal, full-term baby, the gestation period being normal throughout.

These results indicate that the corpus of pregnancy continues the secretion of the follicular hormone, but they also indicate that normal gestation may continue after excision of the corpus even at the end of the third week following the last menstruation.

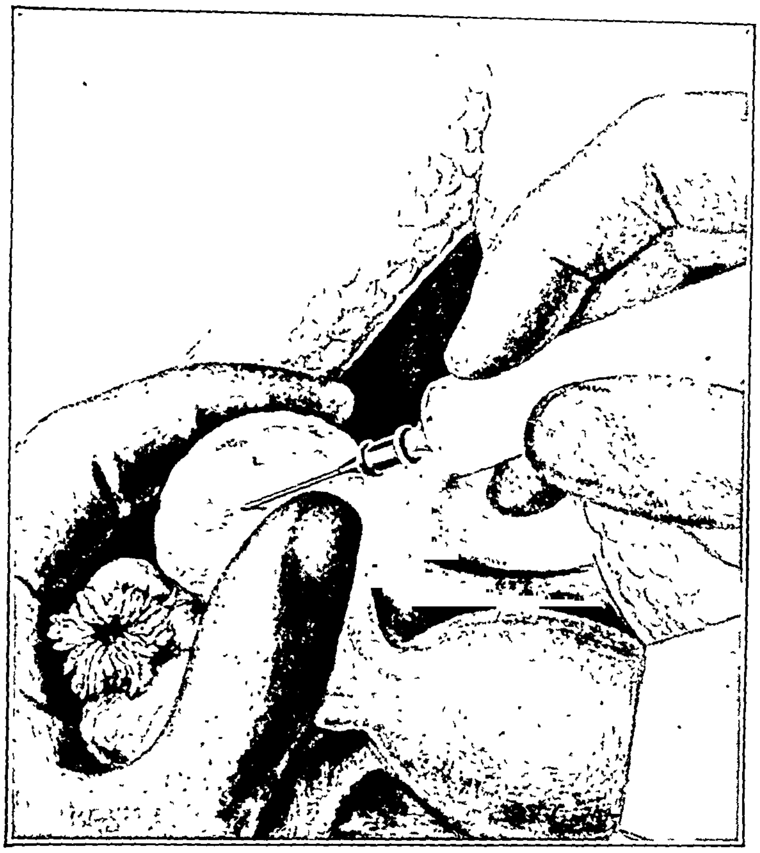

Fig. 5.—Aspiration of follicular contents from the human ovary at operation.

TABLE 2.—*Tests of Placentas, Umbilical Cords, Embryos and Embryonic Vesicles for the Presence of Active Substance*

Extract No.	Specimen	History or Description	Weight or Volume	Total Number of Rat Units	Equivalent of Material Tested	Yield in Rat Units per Gm. of Tissue	Result
YP	Placentas*	Full term	>515 gm.	>120	5.0	>0 2	+
			<680 gm.	<420	1.3	<0.7	—
6 P	Placenta	7th month	....	.....	...	.....	+
8 P	Placenta †	Early 4th month	99.5 gm.	>30	3.3	>0.3	+
					2.4	<0.1	—
7 P	Placenta	3d month	....	>15	...	.....	+
1 M	Curetted material	2d month (no embryo recovered)	17 gm.	>8	2.0	>0 4	+
					1.3	<0.7	—
11 E	Chorionic vesicle (intact)	2d month contained 20 mm. embryo C. R.	14 6 c.c.	>5	2.0	0 3	+
12 E	Chorionic vesicle (intact)‡	6th week, contained 12.5 mm. embryo	10 c.c.	.....	...	.....	+
2	Three umbilical cords	Full term normal deliveries	....	.... .	...	.....	+
3	One cord and amnion	Normal full term	35 c.c.	.....	...	.....	+
4	One cord (17 in.)	Full term	....	.....	...	.....	+
8 E	Embryo alone from 8 P	Early 4th month	60.7 gm.	<2	30.0	0.0	—
7 E	Embryo alone from 7 P	3d month, 43 mm. C. R.	....	<1	....	...	—
4 E	Embryo alone	2d month, 32 mm.	....	<1	....	...	—

* More than twenty extracts of different placentas have been tested (Footnote 1, third reference).
† We are indebted to Dr. D. S. Conley for this specimen.
‡ Tests made in mice.

EXTRACTS OF HUMAN PLACENTA

Since the pioneer work of Starling and Claypon in 1905, several investigators[19] have worked with extracts of human placenta, usually the human placenta at full term. They have used uterine reactions or growth of the mammary glands as criteria of activity of extracts. We have shown that lipoid extracts of placenta also cause full estrous growth in the vagina of rats and mice just as the follicular hormone does. As yet we have found no reliable method of differentiating between the ovarian follicular hormone and active placental extracts. Using the rat test, we have analyzed quantitatively placentas taken at several stages of gestation. These results are listed in Table 2. It will be noted that there is about ten times as much hormone in the three months placenta as was extracted from the corpus luteum of pregnancy of the third month. In the full term placenta there is from eight to twenty times as much active material as in that at three months. Of course, there is a great increase in the mass of tissue in the placenta with the continuation of gestation. Although the placenta of the three months embryo contains this active substance in considerable concentration, we have been unable to get positive tests from extracts of the embryo alone (Table 2, 4 E, 7 E, 8 E).

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[18] The uterine hemorrhage characteristic of the menstrual cycle in primates is not present in the normal estrous cycle of the lower animals.

[19] Fellner, O. O.: Centralbl. allg. Path. u. path. Anat. **23**: 673, 1912; Arch. f. Gynäk. **100**: 641, 1913. Frank, R. T., and Rosenbloom, J.: Physiologically Active Substances Contained in the Placenta and in the Corpus Luteum, Surg., Gynec. & Obst. **21**: 646, 1915. Hermann, E.: Monatschr. f. Geburtsh. u. Gynäk. **41**: 1, 1925.

It may be possible to determine whether the embryonic or maternal part of the placenta contains this material. Some experimental data on this point might lead to a solution of the question of whether this substance is secreted by the placenta or is produced in the ovary and merely secondarily retained in the placenta. It is, of course, quite impossible to make a clear-cut separation of the maternal and embryonic components of the human placenta.

EMBRYONIC TISSUES

The nearest approach to this so far has been in the recovery of two intact chorionic vesicles dating from the latter half of the second month and in tests of full term umbilical cord. Both of the embryonic vesicles[20] were from ectopic pregnancies; in one case the tube had ruptured, and the embryonic vesicle (Fig. 12) was lying free in a blood clot in the peritoneal cavity. Histologic section of the tube showed some villi still in place, but sections of the embryonic membranes showed little adherent maternal tissue. Extracts of these vesicles (Table 2, 11 E and 12 E) proved positive. Extracts of several different umbilical cords clipped from full term human placentas have also returned positive results. These tests demonstrate that although the embryo itself contains little or no active substance, the embryonic tissue of its membranes contains the hormone. One specimen from a pregnancy of the second month composed of 17 gm. of curetted material, in which both placental tissue and uterine mucosa were readily identified, contained 8 rat units of hormone. It has not yet been possible to get uterine mucosa alone from an early pregnancy to make tests for active substance in purely maternal tissue.

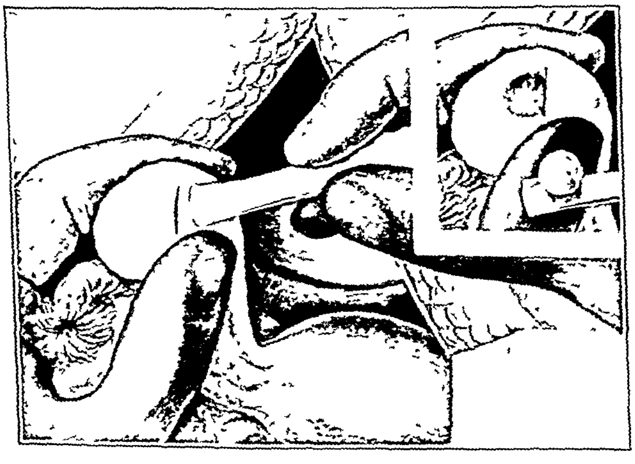

Fig 6.—Technic of removal of the human corpus luteum at operation

ENDOCRINE FUNCTION OF THE PLACENTA

It is probably too early to draw general conclusions concerning the endocrine function of the placenta. It is rather difficult, however, to see how such large quantities of active substance could be retained in such a vascular organ as the placenta without passing freely into the maternal circulation. Since it is so well established that development of the follicles is seriously inhibited during pregnancy, it would seem to us more probable that the human placenta takes over from the ovaries the major part of the function of the secretion of this hormone, thus maintaining the maximum function of the genital tract and initiating growth in the mammary glands during gestation. The increased amounts of this hormone in the maternal organism would seem a logical cause of the hypertrophy of other endocrine organs during pregnancy. Whether this function is borne by the embryonic tissue of the placenta or by both maternal and embryonic parts acting as a unit is still to be determined.

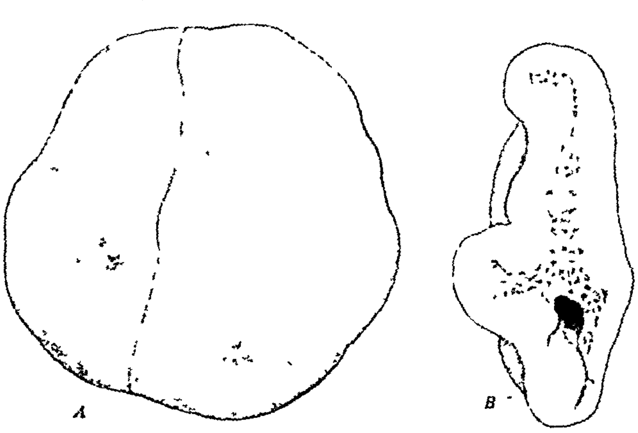

Fig. 7.—Corpus luteum removed three weeks after onset of menstruation: *A*, surface view with cross section *B* indicated; *B*, section to show collapsed condition of this corpus

FROM A COMPARATIVE POINT OF VIEW

A comparison of the endocrine function of the ovaries of birds, lower mammals and primates is interesting. In the hen, with ova maturing daily and without any corpora lutea developing,[21] successively ripening follicles produce the hormone which keeps the oviduct in a condition of functional activity. In the pig and cow, with twenty-one day cycles, although the corpus luteum is a well developed structure, our tests indicate that it does not continue the secretion of the follicular hormone to any appreciable degree. In woman, in whom the cycle is a week longer, the corpus forming after ovulation does continue to secrete the follicular hormone. Does this perhaps indicate an evolutionary trend in ovarian physiology?

Another question of utmost importance concerns the hormone present in the placenta (woman and cow). If the placenta itself secretes this substance, what is the mechanism of balance between placenta and ovaries, or does the placenta merely collect and retain the hormone produced in the ovaries either by the partially developing follicles or (in man) by the corpora lutea? The phylogenetic development of this function in relation to viviparous reproduction offers wide fields for more work.

SUMMARY AND CONCLUSIONS

1. A determination of the amount of active substance extracted from different human genital tissues is made.

2. This is measured in rat units by means of a decisive anatomic and physiologic reaction of the genital tract of the spayed rat to injected lipoid extracts.

3. The follicular hormone is present in greater concentration in large ovarian follicles of women than in those of pigs.

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[20] We are indebted to Dr Hugh P Muir of Parker Memorial Hospital, and Mr. F L Kneibert of Boone County Hospital, Columbia, Mo, for these specimens.

[21] Nonidez, J F · Estudios sobre las gonadas de la gallina, Libro en honor de D Santiago Ramon y Cajal **2**: 137, 1922.

DILATATION OF THE URETER AND KIDNEY PELVIS DURING PREGNANCY

A PYELOGRAPHIC STUDY *

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The severest case of acute pyelitis of pregnancy that ever came under our observation was one in which the patient was in the fifth month of her first pregnancy. She was taken seriously ill, with a temperature of 103.4 F. The urine from the right kidney showed 2,560,000 pus cells and from the left kidney, 2,880 pus cells per cubic millimeter, and the cultures showed *B. coli.* There was marked prostration, icterus, and acute dilatation of the heart. The ureteropyelograms showed enormous dilatation of both kidney pelves and ureters, with extreme torsion and kinking, and marked outward displacement of both ureters.

GROUP 1. ACUTE PYELITIS

In a study of eleven subsequent cases of acute pyelitis, there was marked dilatation of both ureters and kidney pelves in six cases. In two cases only one side was injected, in both of which cases the injected side was found dilated. In three cases in which both ureters were injected, the right ureter and kidney pelvis showed enormous dilatation in two cases and only marked dilatation in the other, while the left ureter and pelvis were normal in all three cases.

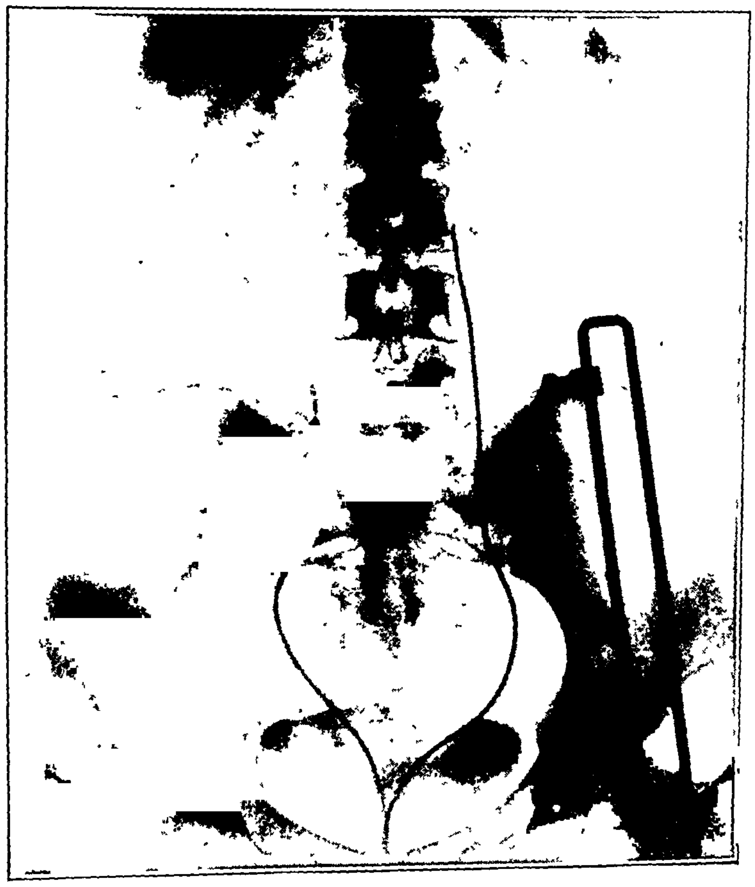

Fig. 2.—Primipara: Aug. 21, 1924; normal pelvis and ureter in early weeks of pregnancy; to be compared with Figure 3.

These findings correspond to the general impression held regarding the presence of dilatation of the kidney pelvis and ureter in pyelitis of pregnancy.

Since dilatation of the ureters and of the kidney pelves was so uniformly found, the question arose as to whether this dilatation occurs only in such patients as develop pyelitis, or whether it occurs commonly in pregnancy and is, in consequence, a predisposing factor in pyelitis.

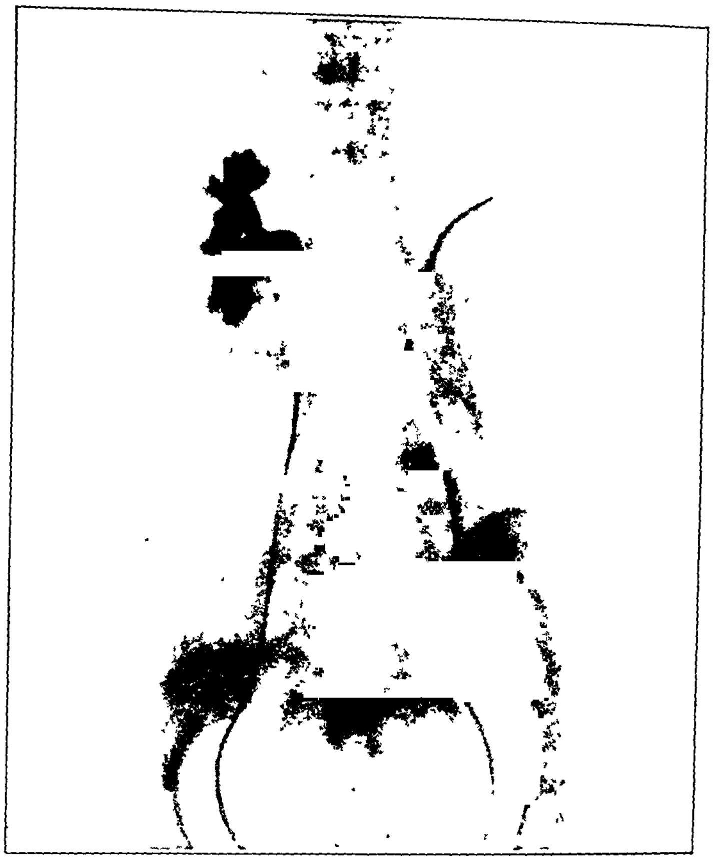

Fig. 3 (Mrs. M.).—Primipara: late pregnancy, Feb. 26, 1925; spindle-shaped dilatation of right ureter; dilated pelvis and calices; to be compared with Figure 2.

GROUP 2. NORMAL CASES

We therefore studied nineteen cases of normal pregnancy, selecting only such patients as were free of the usual symptoms and signs ordinarily considered as indicative of infection in the urinary tract, with the following results:

In the nineteen cases in this series, bilateral dilatation was found in nine cases (47.36 per cent.). In seven cases the kidney pelvis and ureter were dilated on only one side (36.84 per cent.). (In three of the seven cases only one side was injected.) In three cases no dilatation was found (15.8 per cent.). In one of the latter three cases the pelves were normal but the ureters were not filled with the bromid solution.

The three cases showing no dilatation were as follows: quadripara, at term; primipara, at 32 weeks; primipara, at 25 weeks.

The nine cases showing bilateral dilatation were as follows: primipara, at 6 months, two cases; primipara, at 7 months, one case; secundipara, at 8 months, two cases; primipara, at term, three cases; quadripara, at term, one case.

The seven cases showing dilatation of only one side were as follows: primipara, at 6 months, one case; secundipara, at 3 months, one case; secundipara, at 5 months, one case; secundipara, at term, one case; tertipara, at term, one case; quintipara, at 8 months, one case; one patient in whom the parity was unknown, at 8 months, one case. In these seven cases the dilatation occurred on the right side six times and on the left side only once.

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* From the A. D. Thompson Medical Fund for Genito-Urinary Surgery and the Presbyterian Hospital.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* Because of lack of space, this article is abbreviated in The Journal by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the authors' reprints. A copy of the latter will be sent by the authors on receipt of a stamped addressed envelop.

The assertion has often been made that primiparas are more commonly predisposed to pyelitis of pregnancy than are multiparas, because the tense abdominal walls increase the pressure of the pregnant uterus against the ureter; in view of this it is interesting to note the relationship between parity and the presence of dilatation in the normal cases described above. Of the three patients showing no dilatation, two were primiparas. Of the nine patients showing bilateral dilatation, five were primiparas and four were multiparas. Of the seven patients showing dilatation of only one side, one was a primipara.

The frequency with which the right ureter is affected in pyelitis of pregnancy has been by some brought into relationship with the frequency with which engagement occurs in the right oblique diameter of the pelvis; i. e., that pressure of the presenting head is the responsible factor. It will be noted in the foregoing seven cases that in three the pregnancy was so early that presentation could not come into consideration. In the single case with dilatation of the left ureter, the pyelogram was made the day before delivery and the head was engaged in the right oblique (left occipito-anterior), in which oblique, compression of the left ureter from the fetal head could not have occurred.

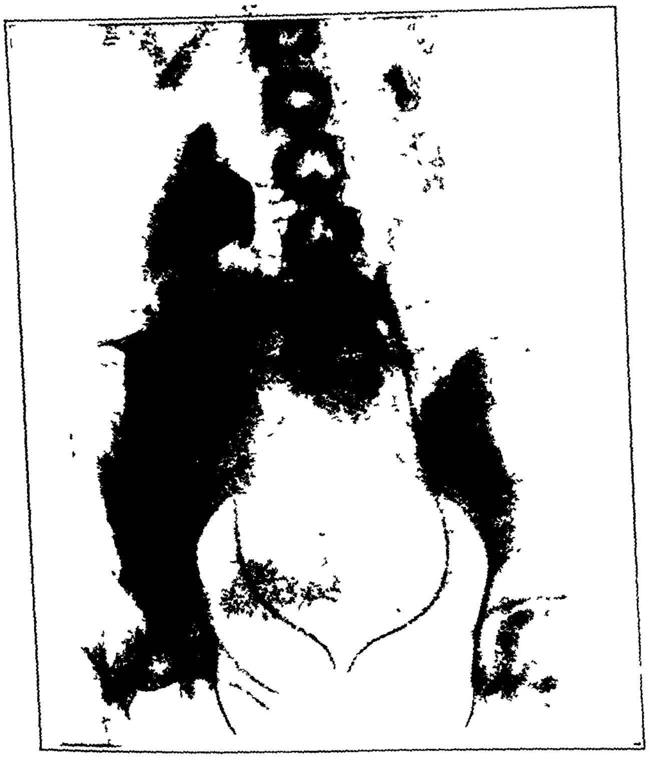

Fig 5.—Primipara sixth month, normal urine, pain in right side of abdomen, dilatation of right pelvis, slight dilatation of right ureter; left pelvis normal, slight clubbing of calices

GROUP 3. PATIENTS GIVING A HISTORY OF PYELITIS BEFORE COMING UNDER OUR OBSERVATION BUT AT PRESENT WITHOUT SYMPTOMS

These patients gave a history of a previous pyelitis either before marriage or during a previous pregnancy, but were free from urinary symptoms and were negative on physical examination at the time that they presented themselves for obstetric attention.

In this group there were six cases, as follows: Bilateral dilatation, two cases, 33⅓ per cent.: primipara at 5th month and secundipara at 3rd month. Unilateral dilatation, three cases, 50 per cent.: secundipara at 6th month, right side dilated; quadripara at 8th month, right side dilated; octipara at 5th month, right side dilated. No dilatation, one case, 16⅔ per cent.: primipara at 35th week.

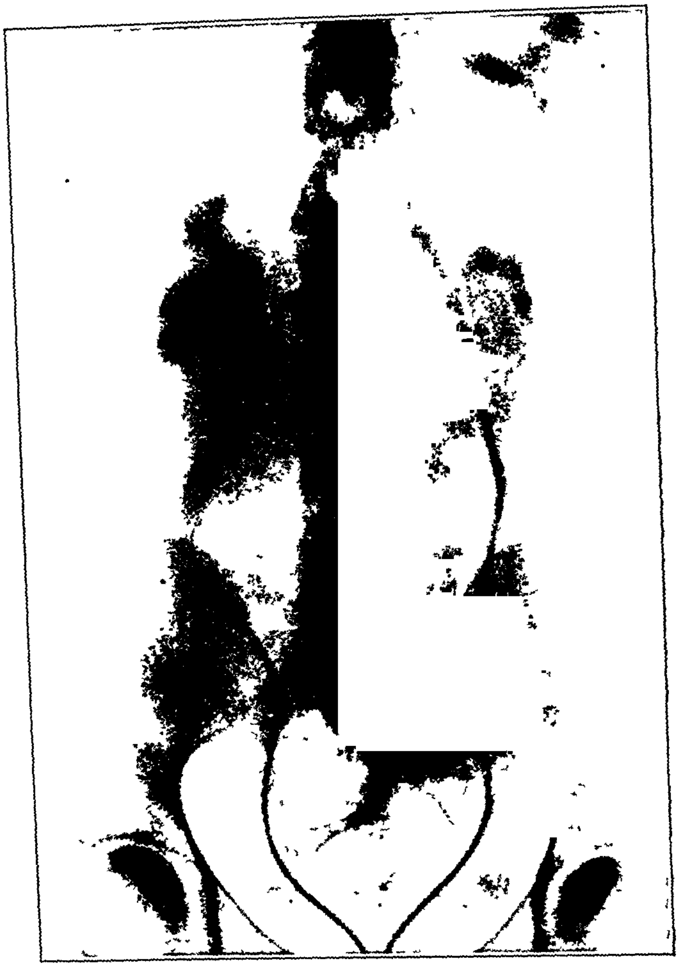

Fig 9.—Dilatation of right ureter and calices, urine normal; history of pyelitis before marriage; urine sterile

It will be noted that, by comparing the percentages found in Group 3 with those given under Group 2, bilateral dilatation, unilateral dilatation and absence of dilatation occurred in relatively the same ratio in the two groups, so that, at least in the small number of cases that we have examined, the history of a previous pyelitis did not increase the number of dilatations above the ratio that we found when examining a group of normal women.

GROUP 4. PERSISTENCE OF PYURIA AND URINARY SYMPTOMS AFTER DELIVERY

Several patients came under our observation because of pus in the urine, which had failed to disappear after delivery. It is well known that during pregnancy patients may have pus and colon bacilli in the urine without clinical manifestations, and that the urine may rapidly become normal after delivery. Even acute pyelitis tends to a rapid convalescence as soon as the uterus is emptied.

Some of the patients came because of backache or other urinary symptoms, after delivery. In this group of cases we found, without exception, definite evidence of dilatation of the ureter, a picture very plainly demonstrated by ureteropyelograms. It is therefore clearly indicated to submit all patients who present residual urinary symptoms after pregnancy to complete urologic study.

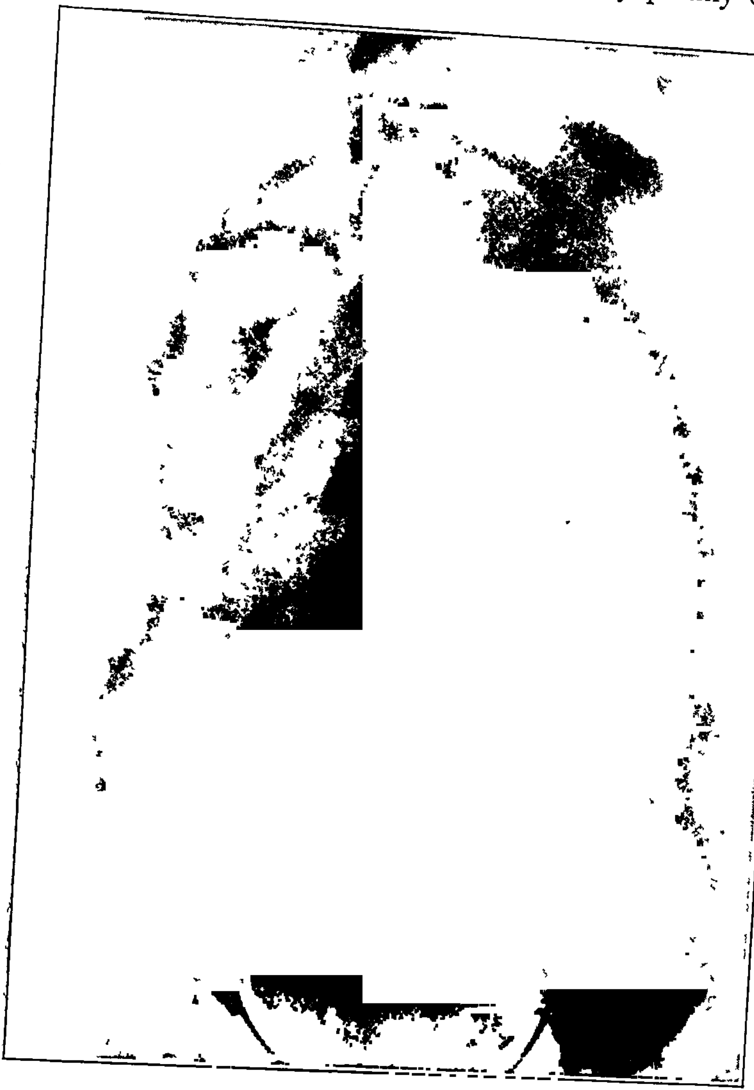

Fig. 10 (Mrs. W.).—Aug. 28, 1924; extensive dilatation of right ureter and right kidney pelvis, with lateral displacement of right ureter.

Repeated pyelography during the course of pregnancy shows the progress of pathologic changes in a given case. In several instances in which the patients were subjected to examination early in pregnancy, a certain amount of dilatation was present in the higher urinary tract. This in some cases was associated with a low lying kidney. Pyelograms several weeks later showed the kidney to be lying at its normal level and that the dilatation had, at least temporarily, disappeared.

In other cases a reversal of conditions was noticed. The dilatation present early in the pregnancy had increased, and as the pregnancy advanced, the hydronephrosis became more marked.

In some of the cases there was a definite displacement of both ureters away from the median line, so that the distance between the two ureters was very markedly increased. This was particularly noticed in the cases in which the dilatation of the ureters was extensive.

In some of the cases the dilatation extended all the way up the ureter from the bladder to the kidney pelvis and was extreme. In others, the dilatation seemed to come to a very abrupt stop at about the brim of the pelvis, below which point the ureters either were slightly dilated or normal. This was particularly marked in cases showing lateral displacement of the ureter.

ABDOMINAL PAIN

Several patients during pregnancy complained of obscure, indefinite and atypical abdominal pain. In two instances a diagnosis had been made of a possible appendicitis. There was no elevation of temperature and there were no urinary findings. These patients were subjected to pyelography. Dilated and kinked ureters were found, as well as hydronephroses.

Our experience leads us to believe that during pregnancy dilated ureters and kidney pelves often provoke pains in the sides and upper abdomen when the urinary tract is not suspected as being the cause of the pain, since the patient is free from fever and has no pus in the urine.

KINKS IN THE URETER

In several cases the ureteropyelogram showed the presence of kinks in the ureter. These were found only when the ureters were moderately or extensively dilated. It is our impression that these kinks are the result and not the cause of the dilatation, since, when pyelograms were made again after delivery, the kinks had disappeared.

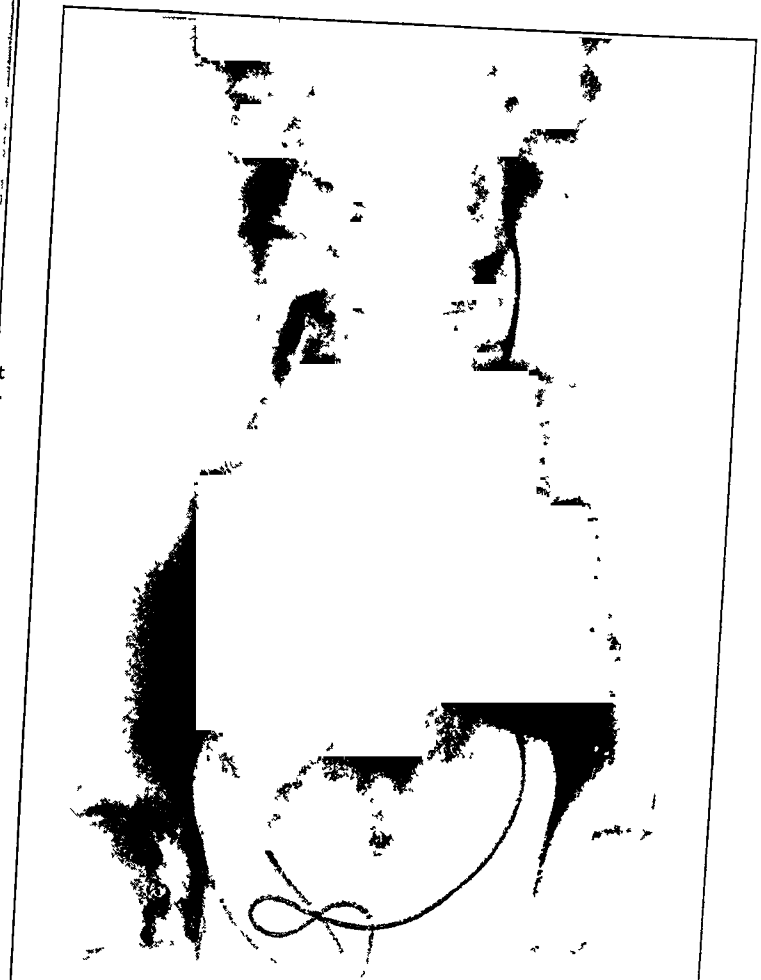

Fig. 15 (Mrs. H.).—Dec. 19, 1924; extreme dilatation of right ureter; urine sterile; free of pus

That dilatation of the kidney pelvis and ureter occurs during pregnancy was known to the older clinicians, who made their observations at necropsy on patients who died from obstetric complications. It is generally not known that dilatation of the upper urinary tract during pregnancy is as common as our figures demonstrate, particularly that varying degrees of dilatation occur in approximately 80 per cent. of cases of normal pregnancy.

122 South Michigan Avenue.

ABSTRACT OF DISCUSSION

Dr. L. R. Wharton, Baltimore: This paper opens up the question of the etiology of pyelitis and dilatation of the ureter. I have specimens of the urinary tract of seven patients in whom such conditions had been diagnosed clinically. Not all of these patients were women who had been pregnant. In general, we found four distinct types of lesions of the ureter: (1) congenital obstruction of the ureters; (2) obstruction due to pressure of the surrounding tissues, such as scar tissue in the pelvis and broad ligament; (3) obstruction due to trauma of operation; (4) the genuine ureteral infections associated also with infections of the whole urinary tract, the bladder and the kidneys. In pregnant women there is, in addition, hyperemia of the pelvis and of all structures around the ureter plus the abdominal "tumor." I have also been doing some work on women who have been pregnant and had pyelitis during pregnancy. It is my impression that, once a hydronephrosis is formed in these cases, the condition is likely to persist. The question of etiology cannot be settled until we have pathologic studies of the cases that Dr. Kretschmer has been discussing. The difficulty clinically is that the symptoms in these conditions are obscure. Recently I saw a woman who never had any symptoms referable to the bladder. The only pain had been in the left kidney region during menstruation. She carried the baby to term and was delivered normally. She was sent to me a year later because of persistent pain in the left kidney region during the menstrual period—exactly the same pain she had before the baby was born. Going over her history, I found that she had an exacerbation of this pain during the puerperium with a fever of 103 F., but with clear urine. I was surprised to find, on cystoscopic examination, that the left kidney was entirely destroyed and that its capacity was 300 c.c. We interpreted the atrophic kidney as a congenital lesion, because she had exactly the same symptoms throughout her whole menstrual life and because there was never any evidence of infection.

Dr. N. Sproat Heaney, Chicago: We examined eleven cases of acute pyelitis of pregnancy, and dilatation of the ureter and of the kidney pelvis was present in every case. Frequently it was bilateral, with torsion of the ureter, kinks and lateral displacements. This picture was so unusual that we wondered whether the patient had some difficulty in the way of kink or torsion of the ureter previous to the pregnancy, if the women who have acute pyelitis of pregnancy are those in whom the history reveals a previous pathologic condition. We, therefore, examined nineteen apparently normal pregnant women who had had no previous operations and no history of previous pain or difficulty with the urinary tract, women who had no history of cystitis or anything that could be interpreted as a previous difficulty, women with normal urine at the time they were examined. These nineteen women were studied cystoscopically and by ureteral pyelograms. Four out of every five showed an easily ascertainable dilatation of the ureter and of the kidney pelvis or of the kidney pelvis alone, showing that the picture we found in the acute pyelitis was not due to any congenital difficulty, to any previous stricture of the ureter, but that with practical uniformity in pregnancy there is a dilatation of the ureter and of the kidney pelvis. If we become familiar with this dilatation we, shall find that in some of those patients who have had obscure pain in the abdomen, which we thought was due to the ovary or the uterus or to spasm of the intestine or to a previously undiagnosed gallbladder lesion, the amount of pain is in accordance with the degree of dilatation of the ureter. We are inclined to believe that a good many of the obscure abdominal pains that patients have during pregnancy are attributable to dilatations of the urinary tract.

BERIBERI FROM A DIET OF RAW STARCH *

E. J. KEPLER, M.D.
PHILADELPHIA

Beriberi is seen so infrequently in the United States that its occurrence is worthy of mention. Cases of the disease do occur from time to time, but chiefly among the crews of vessels landing in our ports or among the Orientals. Vedder[1] has shown that the disease has been fairly common in our asylums and penal institutions, and since the publication of his work epidemics in prisons have been reported by both Travis[2] and Livengood.[3] Sporadic cases occur from time to time, but they are exceedingly rare, especially in this part of the country. The probable reason for our fortunate freedom from the disease lies in the fact that even in our lowest social strata the standards of living are sufficiently high to prevent its occurrence.

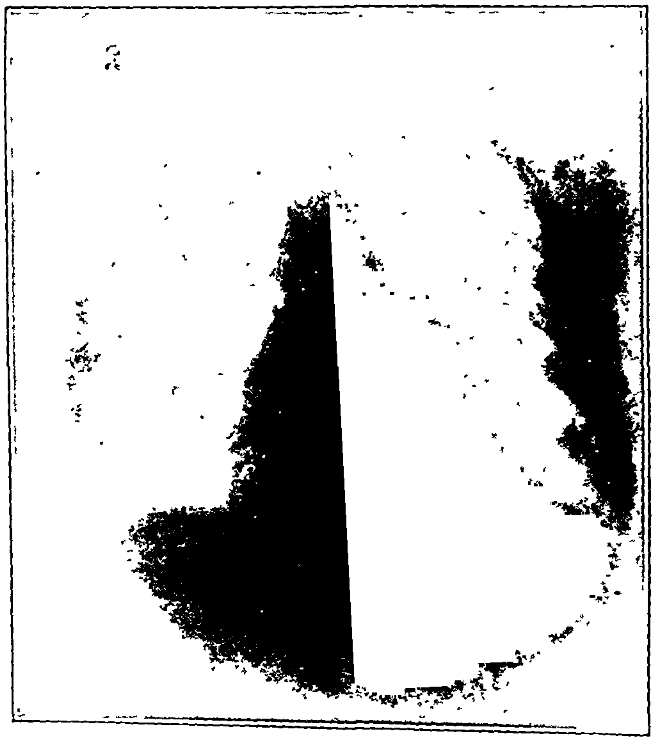

Fig 1.—Dilatation of both sides of the heart on admission: arch, 5.4 cm ; distance from median line to farthest right border, 5.7 cm.; distance from median line to farthest left border, 9.2 cm.; oblique, 16.3 cm.

The etiology of beriberi is now generally accepted to be a deficiency in the diet of a specific vitamin known as water soluble B. In eastern Asia this deficiency is usually the result of the excessive use of polished rice. On board ship, as Holst[4] has shown, vitamin deficiency results from the too exclusive use of canned foods and white bread. How the absence of the vitamin produces pathologic effects is not fully understood, but it seems likely that the vitamin is necessary for the proper metabolism of carbohydrates. Cooper and Braddon[4] pointed out that in birds a quantitative relationship exists between the amount of carbohydrates eaten and the amount of vitamin necessary to prevent the occurrence of polyneuritis; and Vedder[4] and Clark[4] have shown that if birds are fed on a total beriberi diet for only one week, characteristic microscopic changes appear in the peripheral nerves, whereas birds fed nothing but water live three or four weeks and at the end of that time show no microscopic evidence of neuritis. To make this point clearer, an analogy between beriberi and diabetes might be drawn. In diabetes, a definite amount of carbohydrates must be metabolized to prevent the development of acidosis. To prevent the development of beriberi, a carbohydrate diet must be supplemented with a definite amount of vitamin substance. In other words, the water soluble B vitamin is to carbohydrate metabolism what glucose is to fat metabolism. When the disproportion between the carbohydrate and the vitamin is not great, years may elapse before the onset of symptoms, which even then may be mild in character; but on a total beriberi diet pronounced symptoms occur after about ninety days.[5]

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* From the Neurologic Service of Dr. W. G. Spiller, Philadelphia General Hospital

1. Vedder: Beriberi, New York, William Wood & Co., 1913.
2. Travis, F M: Beriberi or Endemic Multiple Neuritis, with Twenty One Cases, Kentucky M J. **15**: 476-482 (Oct.) 1917.
3. Livengood, H. R: Beriberi in Union County Jail, J. M. Soc. New Jersey **13**: 395 (Aug.) 1916.
4. Quoted by Walshe: Nelson Loose Leaf Medicine, New York, Thomas Nelson and Sons **3**, 1921.

Because of the rarity of the condition, it might be well to review the chief features of the disease. In the fatal cases the pathologic findings are fairly constant and consist, first, in degenerative changes in the entire nervous system but with the greatest involvement of the peripheral nerves; secondly, in dilatation and hypertrophy of the heart with the microscopic evidence of degeneration, such as brown atrophy, edematous infiltration, vacuolation, fatty changes and sometimes even fragmentation and segmentation of muscle; finally, in a generalized tendency to edema and effusions into the serous cavities. The changes in the other organs are not characteristic.

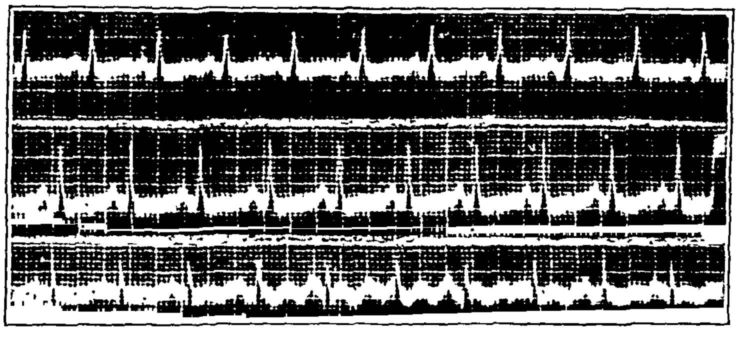

Fig. 2.—Normal conduction time and normal ventricular complexes at time patient was admitted.

The symptoms are determined by the pathologic findings outlined above. In the mild cases the onset is insidious, with weakness, pains, paresthesias and finally paralyses of the extremities. Generally the legs are first affected. Along with the neuritic symptoms, the evidence of myocardial injury becomes apparent and the patient complains of palpitation, dyspnea, and precordial and substernal pain. Slight edema of the feet and ankles may appear. In this stage the disease may remain chronic for many years with slight remissions and exacerbations, but it may become acute at any time with collapse, general anasarca and death. Other cases go on to a chronic neuritis and flaccid paralysis without any edema. An acute form in persons apparently well occurs in which edema and cardiac failure predominate. In these cases death may occur in a few hours, or, if immediate recovery ensues, the disease may go on to the chronic atrophic type indistinguishable from these cases in which the onset has not been so spectacular.

The physical findings are those of a multiple neuritis, with or without edema, and cardiac failure. The heart findings vary greatly. Pulsations in the neck and epigastrium are common. There is practically always an enlargement of the heart to the right and sometimes to the left. The rate is accelerated, and there may be marked arrhythmias. The blood pressure is usually described as being low, but in the twenty-one cases reported by Travis,[2] the systolic readings were uniformly high and the diastolic readings unusually low, the average pulse pressure being 105.

Eye changes occur frequently, as shown by Fernando[6] and others. These include dimness of vision, disturbance of color sense, inconstant hyperemia, blurring of the optic disk and a slight neuroretinitis.

There are no constant laboratory findings. The blood usually shows a secondary anemia and variable changes in the differential picture. The urine is usually diminished in amount, and only occasionally contains albumin. Casts are rare. Few studies in the chemistry of the blood have been made. Arima,[7] in 1917, reported a moderate increase in the nonprotein nitrogen of the blood comparable to that occurring in chronic parenchymatous nephritis.

The prognosis, except in the acute cases in which death is the rule, is generally good. In some epidemics the mortality rate has been above 50 per cent. and in others as low as 3 per cent. Conservative estimates place the average mortality at 5 per cent.[1]

REPORT OF CASE

History.—M. R., a colored woman, aged 28, married seven years, had one child, aged 5 years, and had had two subsequent miscarriages. She was admitted to the Philadelphia General Hospital, Oct. 18, 1924, and assigned to the neurologic service of Dr. Spiller, to whose courtesy I am indebted for the privilege of reporting this case.

Before the onset of the present illness, her health had been good except for influenza in 1918, and occasional mild attacks of tonsillitis. In August, 1918, she had a miscarriage followed by severe vaginal bleeding. One of her friends recommended raw starch as a therapeutic measure. Acting on this advice and later influenced by a superstition among negroes that raw starch has cosmetic value and tends to make the skin white, she gradually acquired a fondness for this type of food, and would eat it from the box, piece by piece, as one would eat candy. At the end of two years this habit had increased to such an extent that she was consuming one of the popular brands of gloss starch in amounts ranging from 1 to 2 pounds (0.5 to 0.9 kg.) daily—approximately from 1,600 to 3,200 calories. Her husband ate only one of his daily meals at home, and rather than cook for herself, she obtained most of her nourishment from the uncooked starch. The cooked meal at night consisted of the usual staple articles of diet found on a working man's table. Under this regimen she lost her appetite, and as a result she practically subsisted on laundry starch, which, so far as its vitamin content is concerned, is certainly the equivalent of decorticated rice. The hold which this habit had obtained on her can be realized from the fact that on several occasions after her admission to the hospital, she asked the nurses to smuggle starch to her. No other peculiarities or excesses in her habits could be discovered. Alcohol was ruled out by repeatedly questioning the patient, her husband and her neighbors.

In spite of her starch diet from August, 1921, she remained in fairly good health until May, 1924, when she began to notice unusual sensations in her hands and feet. She felt as though pins and needles were being stuck in her extremities and that insects were creeping up and down the legs. At times there was a transient edema of the feet. A little later she began to have a constant dull ache in the calves and severe shooting pains down the legs. At the same time she noticed that her extremities were becoming weak, and that she was short of breath on exertion. By September 1, there was marked edema of the feet, pronounced dyspnea on exertion, and sufficient loss of power in the legs, so that walking became very difficult.

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[5] Fraser and Stanton, quoted by Vedder (Footnote 1).

[6] Fernando, S.: The Eye in Beriberi, Am. J. Ophth. **6**: 335-339 (May) 1923.

[7] Arima, E.: Observations on the Nonprotein Nitrogen Blood Content in Beriberi, China M. J. **31**: 336 (July) 1917.

About the middle of September she consulted a physician, who within a period of two weeks gave her six intravenous injections of a yellow solution. This we thought was arsphenamin, but on subsequent investigation we learned that it was a new preparation of calcium containing about 0.1 per cent. of free iodin. Following this treatment she became much worse. Her vision failed rapidly, so that in two weeks she was almost blind. She became drowsy and subject to dizzy spells. She lost all sex desire and at the same time was troubled with an intense pruritus vulvae, both of which symptoms she lamented very bitterly. There were attacks of severe substernal and abdominal pain with loss of appetite, nausea, vomiting, palpitation and dyspnea. There were no urinary disturbances other than that the urine became scanty and highly colored. The remainder of the history was negative.

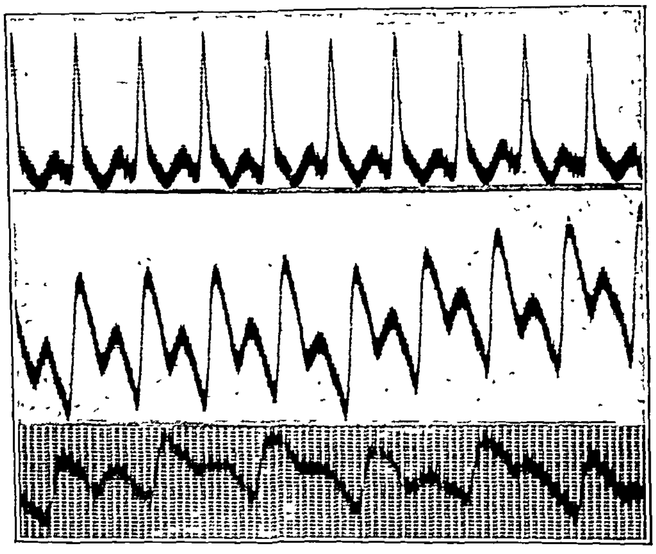

Fig. 3 —Pulse tracings from the radial artery: The top tracing shows the collapsing pulse suggesting aortic insufficiency; beginning of upstroke to peak of primary wave, from 0 06 to 0 065 second; beginning of upstroke to predicrotic summit, 0.12 second, against 0.23 second in normal persons; this tracing should be compared with the middle tracing, which was made when the patient was discharged; the bottom tracing was made at the same time as the middle, but at twice the rate of speed, in order to bring out the time relationships more clearly; both are entirely normal

Examination.—On admission the patient, well developed and overnourished, was retching and vomiting. The temperature was normal, pulse rate 120, and respiratory rate 35. She appeared to be very ill.

The vision of each eye was greatly impaired. She was able to recognize a hand passed before the eyes, but was unable to count the number of fingers held before her. The pupils were round and regular, with only a partial response to light. The fundi showed some pallor of the temporal sides of the disks, full veins, pulsating arteries and several recent retinal hemorrhages lying close to the disks.

The thyroid was slightly enlarged, but not tender. The lungs were normal. The cardiac impulse was diffuse and pounding, so that the left breast shook with each beat. Marked pulsations were observed in the suprasternal notch, over the carotid and temporal arteries, as well as over the abdominal aorta. There were vibratory thrills felt at the base of the heart and in both carotid arteries. The heart was enlarged to the right and to the left, as shown by the teleroentgenogram (Fig. 1). The heart sounds were of a poor quality, the rate accelerated, and the rhythm normal. Three distinct murmurs could be heard. At the apex there was a soft, blowing systolic murmur and at the base to the left a very loud, rough, systolic murmur. In the fourth left interspace both murmurs could be heard and identified. To the right of the sternum in the second interspace there was another soft, blowing, systolic murmur. On repeated examinations no diastolic murmur was heard. Pistol shot sounds were heard in the femoral arteries, but no to and fro murmur. The blood pressure in the arms was 108 systolic and 0 diastolic, and in the legs 180 systolic and 0 diastolic.[8] The electrocardiogram showed normal conduction and a normal form of ventricular complexes (Fig. 2). Tracings of the radial pulse showed a very quick, collapsing pulse suggesting aortic insufficiency (Fig. 3).[9]

The skin of the extremities was dry and scaly. Both hands and feet showed marked loss of power. There was a bilateral foot drop. The hands and feet were extremely sensitive to pressure, and there were patchy areas on the legs over which sensation was diminished. The calves were slightly atrophic. No edema was present over the tibiae, but there was a slight amount over the sacrum. All the tendon reflexes were absent. There was no Babinski reflex. The patient was able to take a few steps by supporting herself, and the gait when so examined seemed to be of the steppage type. The remainder of the examination was negative.

Laboratory Findings.—The blood examination revealed: hemoglobin, 60 per cent.; red blood cells, 3,800,000; leukocytes, 8,400, with 71 per cent. polymorphonuclears, 24 per cent. lymphocytes, 2 per cent. monocytes, and 3 per cent. metamyelocytes; and platelets, 300,000; the bleeding and clotting time were normal. Study of the red cells showed no basophilic stipling or abnormalities in the size and shape of the cells.

The urine examination revealed: acid; specific gravity, 1.022; a light cloud of albumin; no sugar; no acetone; many casts, both hyaline and granular, and many leukocytes and red cells. The benzidin test for blood was positive. There was no tyrosin or leucin present.

The hair was examined for arsenic, but none was found. There was no arsenic, lead or mercury in the urine. The blood culture was sterile. Cultures from the nose and throat showed nothing remarkable. The blood Wassermann reaction was repeatedly negative with cholesterin and Noguchi antigens. The spinal fluid was entirely normal in all respects, including the Wassermann and colloidal gold tests. Cystoscopic examination showed edematous ureteral openings, diminished excretion of urine, and greatly retarded excretion of indigocarmin injected intravenously. The urine was sterile.

Treatment and Course.—On admission, a diagnosis of acute nephritis and multiple neuritis of unknown etiology was made. The nephritis appeared to be more urgent, and treatment consisting of a low protein diet and large doses of the alkaline diuretics was instituted. After about ten days, a diagnosis of beriberi was made. The diet was then modified and autolyzed yeast given. Marked improvement followed. The urine became normal. The heart murmurs gradually disappeared, the blood pressure became normal (124 systolic and 80 diastolic), the pulsations in the peripheral arteries disappeared, and the heart became normal in size (Fig. 4). A pulse tracing

Results of Chemical Examination of the Blood

	10/20	10/27	11/26
Urea nitrogen	20.0	45.0	11.0
Uric acid	6.6	8.0	4.0
Sugar	155.0	180.0	110.0
Creatinin	.....	1.4	.....
Carbon dioxid per 100 c c.	.....	43 c.c	.....

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[8] It is realized that the actual diastolic pressure did not drop to zero, but in taking the readings no fourth or fifth phase could be detected.

[9] Graphic cardiac studies were made and interpreted by Dr. T. M. McMillan, Philadelphia General Hospital.

taken from the radial artery was entirely normal when the patient was discharged three months after admission (Fig. 3). The peripheral neuritis gradually subsided, and at present the patient is able to walk and is at home doing her own housework.

COMMENT

The diagnosis of beriberi in this patient seems justified because of: (1) the history of a prolonged high carbohydrate diet deficient in vitamins; (2) the clinical picture of peripheral neuritis with myocardial failure—the ordinary causes for these conditions having been eliminated, and (3) the rapid response which the patient made to specific therapy.

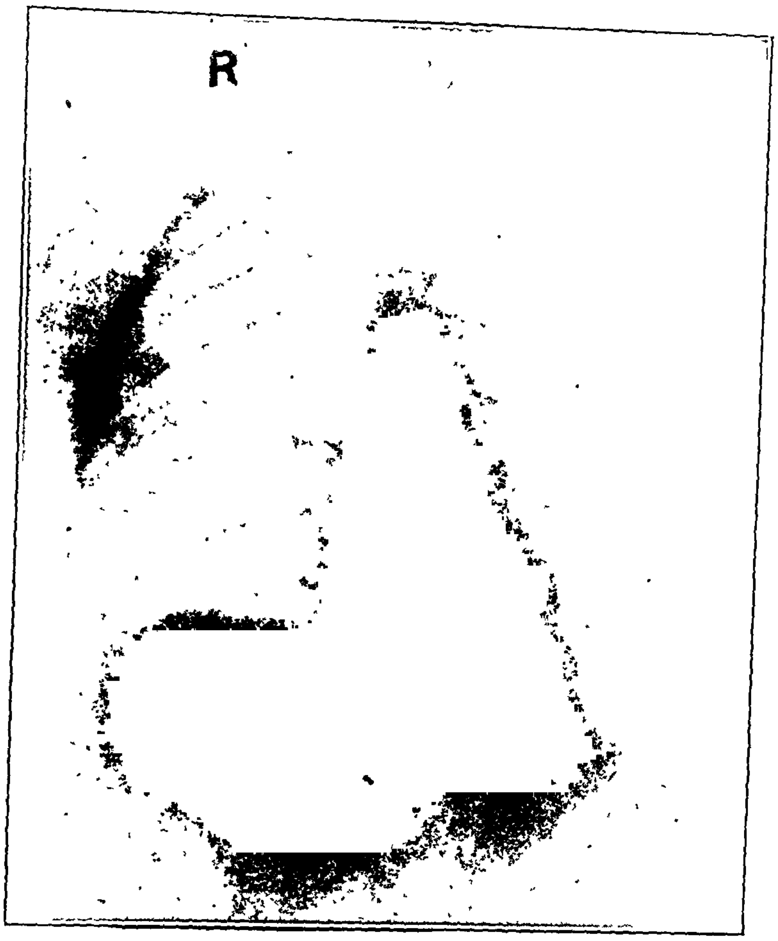

Fig. 4.—Condition when the patient was discharged: arch, 5.4 cm.; distance from median line to farthest right border, 3.9 cm.; distance from median line to farthest left border, 8.2 cm.; oblique, 14 cm.

The nephritis is difficult to explain. Beriberi ordinarily does not produce a nephritis. Whether it occurred as an independent condition or as the result of intravenous medication, it is impossible to say. The possibility of some toxic substance in the starch itself, which could produce both a nephritis and a peripheral neuritis, was carefully considered. However, the analysis of gloss starch given in the textbooks, as well as that submitted by the manufacturers of the particular starch in question, makes this possibility very unlikely.

The peculiar cardiac findings simulating aortic valve disease afford material for much interesting speculation. Vedder has shown that beriberi is a disease of the entire nervous system, and it seems possible that a paralysis of the vasomotor system, in which the heart was pumping blood into relaxed and dilated arterioles, could give the vascular signs presented by the patient. On the other hand, a relative aortic insufficiency might have occurred as a result of the dilatation of the heart, although if this were true it seems as though a diastolic murmur should have been present.

TUBERCULOSIS AFFECTING THE OPTIC CHIASM

WITH SECONDARY OPTIC NERVE ATROPHY AND RETINITIS: DIAGNOSIS AND TREATMENT WITH TUBERCULIN *

WILLIAM E. GAMBLE, M.D.
AND
RICHARD C. GAMBLE, M.D.
CHICAGO

This case is presented because of the unusual sequence of bilateral inferior altitudinal hemachromatopsia, optic nerve atrophy and retinitis, and also to call attention again to a safe and reliable method of diagnosing a tuberculous lesion affecting the optic nerve.

This patient is an intelligent American, aged 45. When we first saw him, Oct. 30, 1922, he was in good health, carrying on his duties as an executive in a manufacturing concern. He had noticed that his vision had failed a little, and thought that his glasses needed changing. There had been no flashes of light, no flickering, no pain, and no change in his general health.

Examination of his eyes showed: vision of right eye, 20/15; of left eye, last letters down to 20/25. He could see the end of the line better than the beginning, probably owing to the beginning of a scotoma.

Homatropin refraction: R. plus 0.25 sph. plus 0.25 cyl. axis 180 = 20/15 plus 2. L. plus 0.50 sph. = last letters to 20/25.

The eyes were normal externally, including pupillary reactions.

Examination of the fundus revealed both disks pale, especially the left. The retinas were normal.

Perimetric examination revealed bilateral, inferior altitudinal hemachromatopsia, with concentric contraction for form in the left eye and color fields smaller in the left eye than the right.

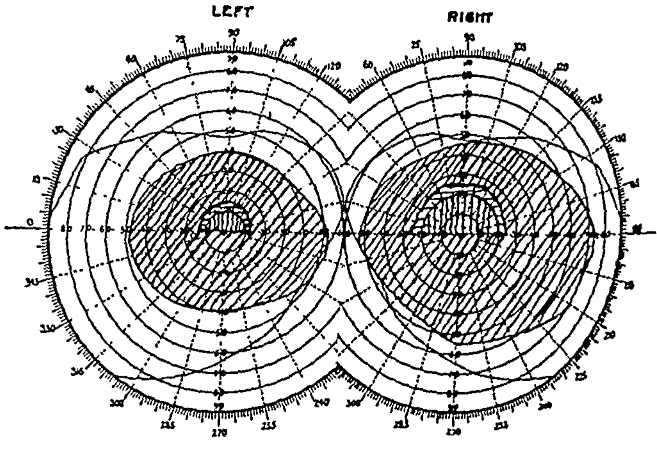

Fig. 1.—Color fields, 1 cm. object, Oct. 30, 1922: white, oblique; red, horizontal; green, vertical: bilateral inferior altitudinal hemachromatopsia.

The diagnosis was bilateral secondary optic atrophy (Fig. 1).

A very thorough general examination was made by the patient's physician, Dr. W. H. German, to determine the etiology. The general physical examination was negative. The blood Wassermann reaction was negative, the urine normal, the blood count, reds, whites, and differential count normal. The roentgen-

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* Read before the Section on Ophthalmology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

ray appearance of the region of the sella turcica was normal. Neurologic examination by Dr. Archibald Church gave no clue. As optic atrophy is often syphilitic, and no other treatment seemed advisable, the patient was treated with potassium iodid by mouth and neo-arsphenamin intravenously. The vision gradually grew worse, reaching 20/40 in the left eye, May 23, 1923, seven months after the patient had been first observed. Vision of the right eye remained 20/15 throughout the entire course of the disease. During this time the altitudinal hemachromatopsia had disappeared, and on Jan. 15, 1923, two and one-half months after the first observation, perimetric tests showed the field for the right eye normal, while that of the left eye showed a temporal contraction, especially for colors. This contraction increased and a long narrow paracentral scotoma appeared, reaching from the blind spot almost to the center of fixation (Figs. 2, 3 and 4). May 23, all antisyphilitic treatment was stopped, and we decided to feel our way cautiously with tuberculin. A general physical examination was made again and no contraindications to tuberculin were found, so biweekly injections of tuberculin were started as a therapeutic measure. The initial dose was 0.001 mg. of tuberculin T. R. injected subcutaneously in the arm. No reaction, general, focal or local, was observed, and after just a few injections the vision in the left eye was improved, so the dose was increased gradually. Within two months vision in the left eye had improved from the last few letters in 20/40 to the last few letters in 20/15. By this time the patient was receiving 0.02 mg. of tuberculin T. R. at a dose, and was in fine general health. He disappeared for a period of about six weeks, and on his return we were dismayed to find that the vision in his left eye had dropped to 20/50 plus 1, and also to see a very peculiar striking form of retinitis in his left eye (Fig. 5). There were many small, horizontally oval white spots in the retina between the disk and macula, following quite closely the anatomic arrangement of the nerve fibers in that region; i. e., an ellipse. Where these spots coincided with retinal vessels they were superficial to them. There was no pigment change and no hemorrhage. Perimetric and campimetric charts were about the same as before. Injections of tuberculin were started again, and the patient was sent back to his physician for another physical and laboratory examination. This time, as before, the results were negative.

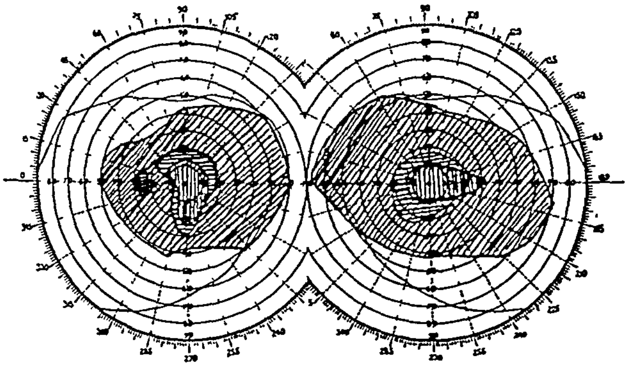

Fig 2.—Color fields, 1 cm object, Jan. 15, 1923. temporal contraction for colors, left eye.

In view of his improvement when treated by tuberculin, and his relapse when he stopped it, we felt confident that the lesion was tuberculous in nature, but we wanted absolute proof. This could be obtained only by a diagnostic injection of an overdose of tuberculin resulting in a focal reaction, made manifest by a reduction in vision.

December 4, 1923, O. T., 1.5 mg., was injected subcutaneously in the arm. The focal reaction was questionable; the loss in vision was only a few letters, not more than the usual variation from day to day; however, he had more difficulty in reading the letters, and said that his vision did not seem as clear. There was also a feeling of discomfort about the left eye. There was no change in the retinitis. The scotoma was slightly larger. There was no general or local reaction. The case was watched for several days, but no change occurred. December 13, a larger dose was given, O. T., 3 mg. subcutaneously. This produced a decided focal, local and general reaction. Vision dropped from 20/50 to 20/100 — 1 within twenty-eight hours, the arm was painful at the site of the injection, and there was general malaise, anorexia, backache and a temperature of 100 F. by mouth. No change in the retinitis or in the scotoma was noted. All these symptoms were gone in forty-eight hours, except the vision, which returned to its previous state of 20/50 within one week. This reaction verified our conception of the etiology and also our faith in the harmlessness of this measure as a means of making a positive diagnosis in tuberculous lesions affecting the optic nerve.

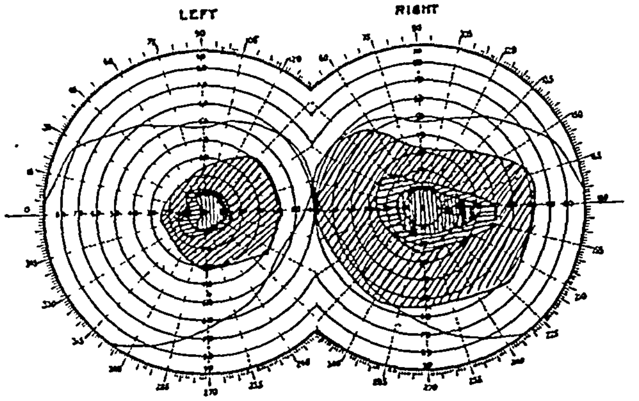

Fig. 3.—Color fields, 1 cm. object, March 14, 1923: more marked concentric contraction for form and colors, left eye.

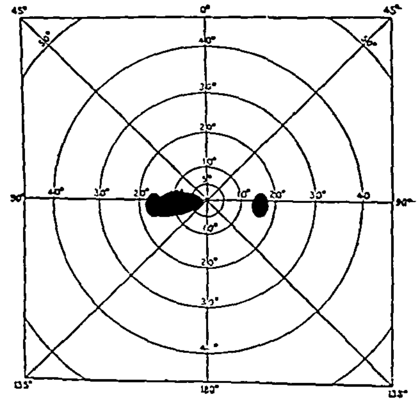

Fig. 4.—May 3, 1923: scotoma, left eye.

The patient was now treated in earnest, and he cooperated very faithfully. The results were gratifying. There was a gradual improvement in vision. Within six months vision in the left eye had improved to 20/25 plus, the scotoma had become smaller, and the retinitis had disappeared, leaving only a few fine pigment spots. Treatment was continued for another nine months in order to avoid a second relapse (Figs. 6 and 7)

We believe that the etiology was established beyond question by the decidedly positive reaction to tuberculin O. T. The site of the lesion cannot be proved so accurately. The occurrence of bilateral, inferior altitudinal hemachromatopsia early in the disease, followed by atrophy of both nerves and permanent damage to the conduction powers of the fibers of the left optic nerve only, speaks strongly for a lesion above the chiasm affecting it superficially, especially toward the left side. Such a lesion would probably be in the meninges. Tuberculous involvement of nerve tissue is usually meningeal, and the damage to the nerve tissue that occurs comes about by infiltration of toxic material from the meningeal focus, by pressure or by growth into the nerve tissue. In this case, if the lesion had been located in the chiasm itself there would in all probability have been more permanent damage to the conduction power, with more loss of vision. It seems reasonable to suppose that the tuberculous focus was in the meninges, and that the disturbance in vision was due to the action of tuberculous toxin on the nerve fibers. The type of retinitis also lends support to this hypothesis in that it was apparently due to some irritating substance spreading out along the course of certain nerve fibers. The white spots in the retina were not tubercles, nor were they the collections of albuminous material such as is often found between the nuclear layers of the retina in nephritis or diabetes. They were definitely located in the nerve fiber layer of the retina; but whether they were formed by cellular infiltration or albuminous material is impossible to say.

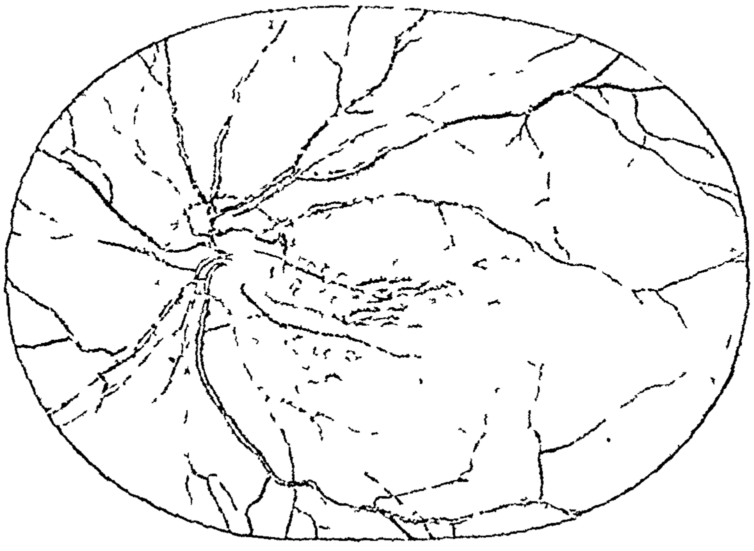

Fig 5—Oct 9, 1923 retinitis, left eye

The use of tuberculin is, of course, not new. It has been tried and has been discarded by a majority of physicians for most forms of tuberculosis. Its dangers have dominated the minds of the profession to such an extent that its real usefulness has largely been lost. In addition, its specific action has been questioned by investigators because of the more recent observations in the nonspecific protein reactions.

It is in lesions of the anterior segment of the eye that tuberculin is most often used, in iritis, scleritis, sclerosing keratitis, etc. Here the lesion can be easily observed. By use of the loupe or corneal microscope, slight changes can be made out. We do not fear the dangers of tuberculin in these cases: a little swelling, a small hemorrhage or a slight increase in sclerosis does little damage. But in lesions of the posterior half of the eye and of the nerve, ophthalmologists, as a rule, are so mindful of the dangers that they are afraid to clinch their diagnosis by giving a diagnostic dose large enough to cause a focal reaction. It is our belief that the focal reaction resulting from the use of a proper dose of tuberculin O. T. is temporary and free from danger, and that it is essential to the diagnosis of tuberculous lesions of the optic nerve. There is nothing characteristic in the appearance of a tuberculous optic neuritis; the diagnosis can be made only by obtaining a positive focal reaction with tuberculin, and the most valuable sign in the focal reaction is temporary loss of vision. In fact, reduction in sight may be the only evidence of the focal reaction. It was the only evidence in this case and was the only evidence in two cases already reported by one of us.[1]

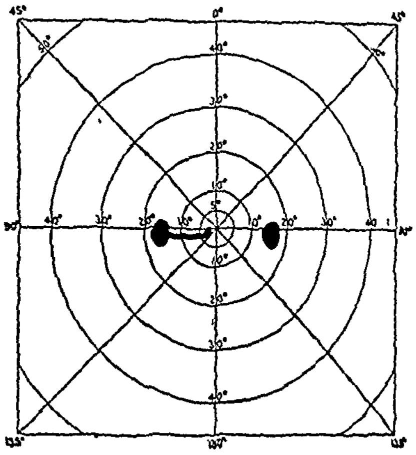

Fig 6—March 13, 1924: scotoma, left eye.

The first of these also involved the chiasm, but clinically there was papillitis. There was, however, no retinal involvement at any time. An injection of 4 mg. of tuberculin O. T. was followed in seventeen hours by a drop in vision from 20/40 to 20/100, without any change in the appearance of the disk. In four days, vision had returned to 20/40. Subsequent treatment with tuberculin T. R. resulted in vision of 20/15, though the disk has remained dead white to date. The second case was clinically an optic neuritis, though later in its course a typical star shaped mass of exudate appeared in the macular region, giving the appearance of an albuminuric retinitis. In this case an injection of 2.5 mg. of tuberculin O. T. caused a reduction in vision from 20/20 to 20/200 in forty-eight hours. In this case the vision did not return to normal until twenty-one days had elapsed. During this period a star shaped mass of exudate appeared in the macula. The ultimate result was normal vision, following treatment with tuberculin T. R., though the disk shows marked secondary atrophy. No relapse has occurred in either of these two cases since 1911.

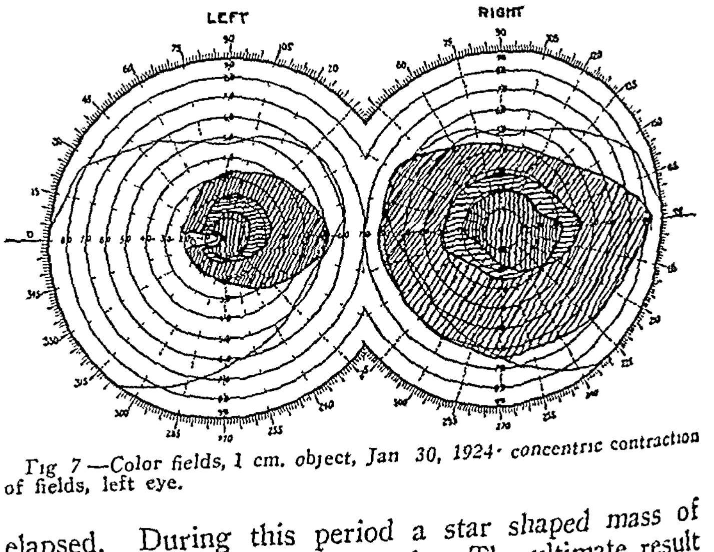

Fig 7—Color fields, 1 cm. object, Jan 30, 1924: concentric contraction of fields, left eye.

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[1] Gamble, W E.: Ophth. Rec, February, 1911.

In these three cases of retrobulbar neuritis we find that the sight reduction test is the essence of the focal reaction; we find that the focal reaction is safe, and that improvement follows the use of small doses of tuberculin T. R.

It is true that in two of these cases retinitis appeared following the use of tuberculin. In one it appeared several weeks after a focal reaction from 2.5 mg. of tuberculin O. T. In the other it came on after a long course of therapeutic injections of tuberculin T. R., but after a rest period of about a month, and before the focal reaction was used. In both cases it disappeared while tuberculin was being used. The other patient had no retinitis, although a focal reaction from 4 mg. of tuberculin O. T. was elicited.

The excellent results obtained by the use of various foreign proteins in certain types of inflammation in the eye has to some extent questioned the specific action of tuberculin on a tuberculous focus. There is nothing specific about the action of milk or typhoid vaccine on gonorrheal conjunctivitis, or on a postoperative inflammation; but there is often a marked improvement. There are, however, fundamental differences between the use and action of tuberculin and of a nonspecific foreign protein. Tuberculin is capable of producing a very marked reaction on a tuberculous focus, even though a very small dose is used. It produces no reaction whatever on nontuberculous soil, in any ordinary dosage. On the other hand, milk or dead typhoid organisms must be used in much larger amounts to produce a reaction; then they produce a reaction in any one. Many different types of acute inflammation in the eye are benefited, but tuberculous lesions are not. It is believed that the value of a milk injection, for example, lies in the leukocytosis and febrile reaction that it causes, while the value of a tuberculin injection lies in an increase in fibrosis resulting from long continued low grade inflammation in the tuberculous focus. Even in the cases in which massive doses of tuberculin O. T. are used in large conglomerate tubercles of the eye with the intent to get repeated focal reactions, the action is still a specific one. This form of treatment is one of last resort, and is not approved of by many; yet it does produce good results in many cases, results that are not obtained by any dose of milk or bacterial protein other than tubercle bacilli.

30 North Michigan Avenue.

Progress Record

Date	Vision	Treatment	Comment
10/30/22	R., 20/15 L., last letter to 20/25	....	Disks pale, especially left; bilateral inferior hemachromatopsia
1/15/23	R., 20/15 L., 20/30	....	Fields: R., normal; L., temporal contraction, especially for colors
3/14/23	R., 20/20 + L., 20/25	....	Fields: R., normal; L., contraction greater
5/ 3/23	R., 20/15 + 3 L., last letter to 20/40	....	Fields: R., normal; L., contraction less, but paracentral scotoma from disk to blind spot
5/23/23	....	T. R. 0.001 mg. subcutan.	No reaction
5/26/23	....	T. R. 0.001 mg.	No reaction
5/31/23	R., 20/15 L., last letter to 20/25	T. R. 0.001 mg.	No reaction
6/ 5/23	....	T. R. 0.002 mg.	No reaction
6/ 8/23	....	T. R. 0.003 mg.	No reaction
6/12/23	....	T. R. 0.003 mg.	No reaction
6/15/23	....	T. R. 0.004 mg.	No reaction
6/19/23	L., last three letters in 20/25	T. R. 0.006 mg.	No reaction
6/23/23	....	T. R. 0.008 mg.	No reaction
6/26/23	....	T. R. 0.01 mg.	No reaction
6/29/23	L., last three letters in 20/20	T. R. 0.01 mg.	Scotoma smaller
7/ 3/23	....	T. R. 0.01 mg.	
7/ 6/23	....	T. R. 0.01 mg.	
7/ 9/23	....	T. R. 0.01 mg	
7/13/23	....	T. R. 0.01 mg.	
7/17/23	....	T. R. 0.01 mg.	
7/20/23	....	T. R. 0.02 mg.	
7/24/23	....	T. R. 0.02 mg.	
8/ 9/23	L., last three letters to 20/15	T. R. 0.02 mg.	
8/16/23	....	T. R. 0.02 mg.	
8/24/23	....	T. R. 0.02 mg.	
10/ 9/23	L., 20/50 + 1	....	Retinitis, L. eye; many small white oval spots between disk and macula
10/16/23	L., 20/50—2	T. R. 0.02 mg.	
11/22/23	L., 20/100	T. R. 0.02 mg.	
11/26/23	L., 20/70	T. R. 0.02 mg.	
11/30/23	L., 20/50 + 2	T. R. 0.02 mg.	
12/ 4/23 2 p.m.	L., 20/50 + 1	O. T. 1.5 mg.	Temperature normal
12/ 5/23 10 a.m.	L., 20/50 + 1 with difficulty	....	Patient feels that vision is worse; discomfort about left eye; scotoma the same; no fever, malaise or anorexia; fundus the same
1 p.m.	L., 20/50 — 1	....	More difficulty in reading letters; scotoma broader
6 p.m.	L., 20/50 + 2		
12/ 6/23	L., 20/50 + 1		
12/13/23 1 p.m.	L., 20/50 + 1	O. T. 3 mg.	
12/14/23 1 p.m.	L., 20/100	....	Arm sore; no areola; general malaise; backache; no fever; no appetite; scotoma unchanged
5 p.m.	L., 20/100 — 1	....	Temperature 100 F. by mouth
12/15/23	L., 20/70	....	Feels better; scotoma unchanged
12/21/23	L., 20/50	T. R. 0.02 mg.	Weight 143½ pounds (65 kg.)
12/26/23	L., 20/50 + 2	T. R. 0.02 mg.	
12/31/23	....	T. R. 0.02 mg.	
1/ 5/24	L., 20/50	T. R. 0.02 mg.	
1/ 9/24	L., 20/50	T. R. 0.02 mg.	Weight, 146 pounds (66.2 kg.)
1/10/24	L., 20/50	T. R. 0.02 mg.	Weight, 147 pounds (66.7 kg.)
1/23/24	L., 20/50 + 2	T. R. 1/30 mg.	
1/27/24	L., 20/50 + 2	T. R. 1/30 mg.	
1/31/24	L., 20/50	T. R. 1/20 mg.	
2/ 5/24	L., 20/50	T. R. 1/20 mg.	
2/11/24	L., 20/30 — 1	T. R. 1/30 mg.	
2/16/24	L., 20/50 + 1	T. R. 1/20 mg.	Weight, 146 pounds (66.2 kg.)
2/20/24	L., 20/50	T. R. 1/30 mg.	
2/26/24	L., 20/50	T. R. 1/30 mg.	
3/ 3/24	L., 20/40 + 2	T. R. 1/30 mg.	
3/10/24	L., 20/50	T. R. 1/30 mg.	
3/13/24	L., 20/40	T. R. 1/20 mg.	Weight, 148 pounds (67.1 kg.)
3/17/24	L., 20/30	T. R. 1/30 mg.	
3/21/24	L., 20/40 + 2	T. R. 1/20 mg.	
3/25/24	L., 20/40	T. R. 1/30 mg.	
3/28/24	L., 20/30 — 3	T. R. 1/30 mg.	
3/31/24	L., 20/40 + 1	T. R. 1/30 mg.	
4/ 4/24	L., 20/40 + 1	T. R. 1/30 mg.	
4/14/24	L., 20/30 — 2	T. R. 1/30 mg.	
4/17/24	L., 20/30 — 3	T. R. 1/20 mg.	Retinitis almost gone
4/22/24	L., 20/40	T. R. 1/30 mg.	
4/25/24	L., 20/30 — 2	T. R. 1/20 mg.	
4/29/24	L., 20/30 + 1	T. R. 1/30 mg.	
5/ 2/24	L., 20/30 + 4	T. R. 1/20 mg.	
5/ 6/24	L., 20/25 — 3	T. R. 1/30 mg.	Retinitis gone
5/ 9/24	L., 20/30	T. R. 1/30 mg.	
5/13/24	L., 20/30	T. R. 1/30 mg.	
5/16/24	L., 20/30 + 3	T. R. 1/30 mg.	
5/20/24	L., 20/30 + 2	T. R. 1/30 mg.	
5/23/24	L., 20/30 + 4	T. R. 1/30 mg.	
5/27/24	L., 20/30 + 4	T. R. 1/30 mg.	
6/ 2/24	L., 20/30 + 2	T. R. 1/30 mg.	
6/ 5/24	L., 20/25 — 1	T. R. 1/30 mg.	
6/10/24	L., 20/30 +	T. R. 1/20 mg.	
6/16/24	L., 20/25 — 3	T. R. 1/30 mg.	
6/20/24	L., 20/30 +	T. R. 1/30 mg.	
6/23/24	L., 20/30 +	T. R. 1/30 mg.	
6/26/24	L., 20/25 + 2	T. R. 1/20 mg.	
7/ 1/24	L., 20/25 + 2	T. R. 1/30 mg.	
7/ 8/24	L., 20/25 + 4	T. R. 1/30 mg.	
7/11/24	L., 20/25 + 3	T. R. 1/30 mg.	
7/15/24	L., 20/25 + 2	T. R. 1/30 mg.	Treatment stopped; patient under observation
8/21/24	L., 20/25		
9/30/24	L., 20/40		
10/ 3/24	L., 20/25	T. R. 1/30 mg.	Treatment continued for safety
10/22/24	L., 20/25 + 2	T. R. 1/30 mg.	
12/ 3/24	L., 20/30 + 1	T. R. 1/30 mg.	Scotoma still present
12/ 8/24	L., 20/30	T. R. 1/30 mg.	
12/16/24	L., 20/30 + 1	T. R. 1/30 mg.	
12/22/24	L., 20/25 — 1	T. R. 1/30 mg.	
12/31/24	L., 20/25 + 2	T. R. 1/30 mg.	
1/ 3/25	L., 20/25 + 2	T. R. 1/30 mg.	
1/ 7/25	L., 20/25	T. R. 1/30 mg.	
1/13/25	L., 20/25 + 2	T. R. 1/20 mg.	
1/20/25	L., 20/25	T. R. 1/30 mg.	Fields: R., normal; L., marked concentric contraction for form and colors, especially temporal; scotoma still present

ABSTRACT OF DISCUSSION

Dr. Malcolm C. Rose, New York: The definite dose report given is very important. I prefer thinking dosage in cubic centimenters, thus avoiding the complicated mathematical problem of converting milligrams into cubic centimeters and enabling one to measure the dose in the syringe graduated in cubic centimeters. This affords a big loophole for mistakes, and if we give too large a dose we have a large focal reaction, and large focal reactions may leave permanent changes in the cornea and macula. They also make the patient so sensitive to the increasing tuberculin dosage, that we have to reduce the dose and thus lose valuable time with treatment, through no fault of tuberculin, but because of mistakes in calculation. Accurate control of dosage makes treatment with tuberculin a pleasure. The authors say that this form of treatment is one of last resort. Why last resort? To use tuberculin as a last resort often ends in tragedy, when if used early it would save many eyes, which are lost or seriously damaged by watchful waiting. If tuberculin is used with knowledge and judgment, there are no contraindications for its use in any ordinary tuberculous complication. Unless an operation on a tuberculous patient is an emergency one, the end-results will be far more satisfactory and better healing will be obtained if we wait to operate until after a thorough course of tuberculin has been given. Eyes will be saved that are now lost.

Why does the interpretation of the reading of the tuberculin positive reaction differ so much according to the surroundings in which it is found?

Why is a positive tuberculin reaction with nondemonstrable lesions in cattle so serious that they must be killed, and in the human family a positive tuberculin reaction with nondemonstrable tuberculous lesions so often considered of no real importance? I believe the day is coming when we shall feel that it is just as necessary in diagnosing chronic eye cases to make a tuberculin test as it is to make a Wassermann test. Tuberculin has not been discarded except by the careless or through relegating the work to an untrained assistant. Thus, the director has no foundation on which to base his judgment as to the increasing or diminishing of his dosage, and it is a blessing to all concerned that the careless, because of their bad results, have to stop using tuberculin.

Dr. Harry A. Smith, Delta, Colo.: I did not hear mentioned the importance of the temperature curve in the diagnosis of ocular tuberculosis. In case of doubt, considering the naturally delicate structures of the eye, one should take the temperature curve carefully over a period of two or three weeks. This will often lead to a diagnosis of ocular tuberculosis when no other tuberculous foci are demonstrated.

Dr. T. B. Holloway, Philadelphia: Something should be said in regard to the possible indiscriminate use of tuberculin. Not that I am opposed to the use of tuberculin, because I do use it; but I do think it is worth while calling attention to the very interesting paper by Dr. Luedde. He based his observations on his own experience and on an elaborate questionnaire investigation among many of the laboratory men of this country. After analyzing his results, Dr. Luedde stated in no uncertain terms that the presence of a focal reaction in cases of intra-ocular tuberculosis pointed strongly to a tuberculous process, but not positively. I question very much whether all of us will accept the definite statement that, in all cases of this kind in which a positive reaction is obtained, the process is necessarily tuberculous.

Dr. Edward Jackson, Denver: Just a word to supplement what Dr. Smith said about the temperature curves. I was reminded of it by a patient who has been seen by members of the section, who are all agreed that the condition is a tuberculous one. She has taken her temperature over considerable periods, many times, and she says that in the last ten years her temperature has scarcely been above normal. It was elevated a fraction of a degree recently. Until that time, sometimes in twenty-four hours it fell distinctly below normal. She has often had more than a degree rise or fall of temperature, although the maximum was not above normal.

Dr. William E. Gamble, Chicago: Regarding Dr. Holloway's doubts whether if we had a case in which we had a focal reaction there would be some question whether it was tuberculosis, we tested with tuberculin all cases in which the etiology of the optic neuritis was obscure. We have never had any reaction in any of the cases we have tested except the three mentioned. I think it will occur (I am talking about tuberculosis of the optic nerve); that a slight reaction will occur in a large percentage of cases that have tuberculosis in this region. I say a large percentage of cases, because in tuberculosis of the eye, even in ulcerated tuberculosis, or in the nodular tuberculosis of the iris we do not always get a focal reaction, so I say it is possible that there may be a slight reaction in cases of tuberculosis of the optic nerve, but then it is definite. Tuberculin does not give any reaction in any other disease except tuberculosis. So that his point is not well taken. Dr. Rose asks why we do not increase the dose. We begin at about 0.001 mg. and increase to about 0.3 mg. Of course, a delicate test would be the temperature curve, but we do not want any increase in temperature. That is the thing we avoid. A more delicate test is the well being of the patient. If the patient is increasing in weight and feels well, we feel satisfied that we are below the toxic dose. Why do we want to keep below the toxic dose? It is well known that on the injection of tuberculin into guinea-pigs that have been infected before the injection, the blood stream is negative, and after the injection the blood stream has bacilli in it. We do not want to distribute the bacilli. That is the danger, so we should keep below the toxic effect.

MERALGIA PARAESTHETICA

ITS RELATION TO OSTEARTHRITIS OF THE SPINAL VERTEBRAE *

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It is with considerable reluctance that I venture to speak of so commonplace a topic as meralgia paraesthetica. The subject, however, is not without its clinical and academic interest and merits extended discussion in view of the vague causes that have been assigned as being responsible for the so-called meralgic syndrome.

From a clinical point of view, in particular, the subject deserves serious consideration since a considerable number of patients with meralgia paraesthetica are constantly coming under observation and are appealing for relief from their distressing symptoms. Definitely to establish the etiology of this disturbance—which up to the present apparently has not been done—will in a great measure serve as a basis for rational therapeutic measures. It is with this purpose in view that the clinical aspects of the affection and its etiologic relationship to ostearthritis of the spinal vertebrae—which I have ventured to establish—have been studied.

Originally described by Bernhardt[1] and Roth[2] in independent communications and referred to in German literature as "die Bernhardt-Rothschen Krankheit," this affection has always aroused considerable attention and interest, as evidenced by continued case reports and papers on the subject since the date of its first publication in 1895. As an indication of the attention which the subject aroused, it may be of interest to note that five years after the date of Bernhardt and Roth's communications, Schlesinger,[3] in the preparation of his paper, was able to abstract fifty-six articles (which analyzed 122 cases) from the literature on meralgia paraesthetica. These were principally in French and German, and included an excellent summary of the subject by Musser and Sailer[4] of this country.

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* From the Division of Neurology, Hospital for Joint Diseases.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] Bernhardt, M.: Ueber isoliert im Gebiete des Nervus cutaneus femoris externus vorkommende Parasthesien, Neurol. Centralbl., 1895, pp. 242-244.

[2] Roth, W. K.: Meralgia paraesthetica, Berlin, S. Karger, 1895.

Clinically, the affection known as meralgia paraesthetica may be described according to Gordon Holmes[5] somewhat as follows:

> It is characterized by paresthesia and pain, usually with slight objective disturbance of sensation in the region supplied by the external cutaneous nerve on the front and outer side of the thigh. The symptoms vary greatly in intensity in different cases. The most common complaint is of abnormal sensations, of numbness, coldness or tingling on the front and outer surface of the thigh. In other cases pain is the chief symptom.

All authors who have written on the subject have quite uniformly agreed on the clinical manifestations as described by Gordon Holmes, with this possible exception: They have not included the anterior aspect of the thigh in the meralgic disturbance. All have stressed the point that it is the outer aspect of the thigh that is invariably involved. My own observations in the cases studied fully corroborate this fact. That the location of the pain or paresthesia is only of academic interest will be shown later if I may ask you to regard meralgia paraesthetica as the expression of a radicular syndrome secondary to ostearthritis of the spine, and not as a distinct clinical entity in the nature of a peripheral nerve affection—as it is regarded by all writers on the subject.

In the introductory paragraph, mention was made of the vague causes that have been assigned as being responsible for the development of meralgia. Among these may be mentioned trauma, infections, syphilis, alcoholism, pregnancy and static foot disturbances.

All writers on the subject stress the fact that the long course of the external cutaneous nerve in the fascia lata predisposes it particularly to traumatic influences and to a less extent infections, etc. While the latter explanation sounds plausible enough, a more critical analysis obviously fails to impress one with the truth of such an assertion. Various important nerve trunks either pierce, are embedded in or are overlapped by muscular bundles and fascial planes that are in constant physiologic activity, and phenomena comparable to meralgia paraesthetica are never in evidence.

We must therefore seek a more logical explanation for the meralgic phenomena. To consider these phenomena in the nature of radicular irritation having their source in vertebral disease will to a large extent dispel the vague generalizations that have been made with regard to the affection.

Viewing the phenomena in this light, we can then regard the external cutaneous nerve as one of the peripheral prolongations of the second and third lumbar roots. Irritation of these roots as the result of a spondylitic process (which is the only condition under consideration in this study) will obviously produce paresthesias of a painful type on the antero-external aspect of the thigh. It is also readily apparent that to regard meralgia paraesthetica as a distinct clinical entity would be to disregard totally the etiologic factors involved, since it is obvious that meralgia may only be the local expression of a general ostearthritic process. That this is actually so has been demonstrated in a series of twenty-five cases studied in collaboration with Drs. Jahss and Stein of the orthopedic division of the Hospital for Joint Diseases.

In the series studied, it was found that meralgia paraesthetica affected the two sexes to an equal degree. It was rare below the age of 30 (only one case in this series) but was quite common between the ages of 35 and 65—obviously the period when ostearthritic processes are most active.

While the affection was unilateral in approximately half of the cases and bilateral in the rest, close questioning elicited the fact that those patients who had persistent unilateral symptoms also had vague intermittent discomfort on the opposite side.

If we are correct in our assumption that meralgia is a root symptom pure and simple, and not a peripheral nerve disturbance, involvement of the second and third lumbar roots would not necessarily be limited to external cutaneous nerve phenomena alone, since other nerve structures of a sensorimotor type, viz., anterior crural and genitocrural, have their origin in part also from these roots. This anatomic fact received corroboration in the clinical manifestations of pain and paresthesia in the anterior aspect and root of the thigh. This was observed in one third of the cases in association with meralgia. It might be of interest to note here that Lasarew[6] described this condition as an isolated variant and termed it meralgia paraesthetica anterior. He did not, of course, suspect the radicular nature of the disturbance which I have postulated as previously indicated.

In association with the meralgia that was the presenting complaint, a number of patients in this series also showed involvement of the lower lumbar and sacral roots, which gave rise to sciatic type of pain.

While meralgic types may occur in the distribution of the cervical roots, they are relatively not as common as the lumbar root forms. This may be explained by the fact that the lumbar articulations are physiologically the most active and that they are the first and most common to succumb to ostearthritic changes.

The subjective phenomena in cases of meralgia vary with each individual. Some complain bitterly of the hyperesthesia, and some of pain; others have combinations of the two, the disturbance obviously depending on the amount of root involvement and the patient's emotional reaction. Objectively, most of the cases showed hyperesthesia of a disagreeable type. Hypesthesia was unusual, contrary to the observations of numerous writers on the subject.

All the patients in this series were subjected to careful orthopedic laboratory and roentgen-ray examinations. The orthopedic phases will be considered first. In practically the entire group there was positive clinical evidence of involvement of the lumbar spine; immobility, rigidity, muscular spasm, obliteration of the lumbar hollow, percussion tenderness and scoliotic manifestations were present in varying degrees.

In none of the cases studied was there clinical or serologic evidence of syphilis, and it might be opportune at this point to say that there was no other discoverable cause for the meralgia except the arthritic process in the vertebrae. I am also not unmindful of the fact that meralgia paraesthetica may be the initial expression of pathologic processes in the central nervous system. Thus, Baccelli[7] reports a case in tabes dorsalis, Bernhardt[1] in hematomyelia, and Sabrazes[8] in dementia paralytica. These cases, however, are not under discussion; and differentiation from the types that form the basis of this paper should cause no difficulties.

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[3] Schlesinger, Herman: Die Meralgia paraesthetica, Centralbl. f. d. Grenzgeb. d. Med. u. Chir. 3: 241, 1900.

[4] Musser and Sailer: J. Nerv. & Ment. Dis. 27: 16, 1900.

[5] Holmes, Gordon, in Osler's System of Medicine, 1910, pp. 490-491.

[6] Lasarew: Deutsch. Ztschr. f. Nervenh. 34: 154, 1908.

The final and most convincing proof of the relationship between meralgia paraesthetica and ostearthritis of the spine has been furnished by the roentgen ray. In practically the entire group of patients there was definite roentgen-ray evidence of an ostearthritic process.

This varied from very mild to advanced degrees of "hypertrophic nonspecific infectious arthritis of the intralumbar articulations, with lipping and overgrowth of the margins of the articular surfaces." The interpretations were made by Dr. N. B. Philips of the roentgenologic division of the hospital, whose cooperation was of great value. Mention might be made here that a number of cases of meralgia not included in this series were negative from a roentgenologic point of view. They showed clinical evidences of spondylitis, however, and it was assumed that the changes were too early to show on the plate or that the process was limited to the intervertebral foramina.

CONCLUSION

In the light of the foregoing facts, the conception that meralgia paraesthetica is a peripheral nerve disease, due to trauma, infections, static foot disturbances or other vague disturbances must be abandoned. A study of twenty-five cases revealed the fact that this affection is radicular in nature and the result of irritation or compression in the intervertebral spaces or foramina.

That this irritation or compression can be attributed to an ostearthritic process in the vertebrae was confirmed by clinical and roentgen-ray evidence. While the matter of treatment has not been under consideration, it obviously suggests itself as directing our therapeutic efforts toward the cause and not the effects of the affection.

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ABSTRACT OF DISCUSSION

Dr. I. S. Wechsler, New York: The point of view which Dr. Rosenheck brings forward is quite at variance with the opinion expressed by all observers. There are a number of things against the conception, much as I like it personally. It furnishes, perhaps, a clearer conception of the pathology underlying the mechanism of the meralgia, but all the cases that I have seen and all those that are reported, are essentially peripheral in nature, and it is difficult to conceive how a radicular process will single out just one branch, a nerve which is essentially cutaneous in nature, which has no motor function, and leave out all the other nerves that come from the same roots. It is equally difficult to conceive of a spondylitic process so limited and so selective as to affect only a few fibers of the second, third and fourth lumbar roots and leave the obturator nerve and the anterior crural untouched. Again, the sensory disturbances are not radicular, but are limited to the upper, outer part of the thigh; nor are there any atrophies in meralgia. But, as I said, it is a plausible conception and furnishes an additional pathologic explanation to those hitherto given.

Dr. Charles Rosenheck, New York: I have been very much troubled by the same thing that Dr. Wechsler spoke about, as to why this so-called meralgia should pick out one nerve; but I think, as I brought out in my paper, that one rarely sees a pure meralgia or a so-called meralgia paraesthetica that is limited to the external cutanous area without involvement of some of the other roots. That is, if one questions the patient very closely, one will find that he has discomfort either in the anterior aspect of the thigh or the opposite side or in the genitocrural division. While that may not answer Dr. Wechsler's question, it is the best one I can offer at present.

Another thing: the external cutaneous nerve has a very long course. After leaving the pelvis, it comes into the thigh between the superior and inferior iliac spines and has a rather long course in the fascia lata, and it is possible that that may in itself determine the meralgic nature of the involvement. I am quite sure that the evidence I put forth in my paper should convice almost any one. It was obvious to me for a long time that the heretofore accepted conception of meralgia paraesthetica would have to be revised. It seemed so apparent and the matter was so simple that I felt there was no other explanation for the meralgia. The clinical and the roentgenologic evidence clinched the matter to my mind very clearly that we are dealing with a primary osteoarthritic process with secondary root involvement.

A SIMPLE METHOD OF CAUTERIZATION OF THE CERVIX *

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While lesions of the cervix are regarded as of minor importance, they are such common precursors of more serious conditions that their successful treatment cannot be too greatly stressed. In spite of the fact that attention has recently been called to the effect of the cautery on cervical lesions, it seems that a majority of physicians are still treating by topical applications, douches and packs, and, obtaining no results, are either advising operative procedures, or are disregarding the pathologic condition entirely, if it is causing no discharge.

That the operative treatment is no longer the method of choice may be seen by the statement of Howard Kelley, who says: "The one method of treatment is the actual cautery. With this process available, I but rarely operate any more for lacerations of the cervix."

Lacerations, erosions of the cervix, and endocervicitis are closely allied, and their treatment to a large extent is the same. A great deal of literature has accumulated on the various methods of treatment of these lesions, but they may be divided into four general classes: (1) treatment with chemicals; (2) the application of radium; (3) surgical treatment, and (4) the cautery.

TREATMENT WITH CHEMICALS

Treatment with chemicals is the method most commonly used by the general practitioner, and until recently, also by the gynecologist, and it is the least satisfactory of any method. It requires frequent office visits over a long period of time, and usually results in practically no improvement.

RADIUM APPLICATIONS

The method of radium applications has been advocated by many gynecologists, and has given excellent results in their hands. Curtis has reported eighty-seven cures in a series of 104 patients.

Although of great value, radium treatment of these conditions is not practical in the hands of men who treat most of the cervical erosions, on account of the expense, and the dangers of its use in inexperienced hands.

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[7] Baccelli: Meralgia Parestetica c. Tabe Dorsali, Acad. di Medicina di Genova, May, 1897.

[8] Sabrazes: Dementia paralytica: meralgia parasthesique, Rev. de Méd., 1897.

* Read before the St. Louis Gynecological Society, May 9, 1925.

Furthermore, it is unnecessary, as the results obtained with it are due to the same action as those obtained with the cautery; viz., destruction of pathologic tissue.

SURGERY

While surgery is to be condemned in most cervical lesions, it still has its place in the treatment of the cervix. However, it should be limited to those cases which cannot be cured with the cautery. Heineberge says: The ease with which the cervix can be amputated has led to its removal without due consideration of other possible means of restoring it to a healthy condition." Trachelectomy should be done when there is hypertrophy with extensive multiple lacerations, extensive infection and cystic change; but even here, amputation may sometimes be avoided for a more simple operation, if the cautery method is properly used a month or two before. If at all possible, trachelectomy should be avoided during the child-bearing period, as it predisposes to abortion and dystocia.

While the immediate results of surgical treatment are excellent, the end-results are far from ideal. In many cases the discharge continues, and in some cases follows where there had been none before.

Mugit says that trachelorrhaphy did not relieve endocervicitis with its discharge; that amputation was followed in four fifths of his cases by sterility, and that one half of the remainder failed to carry to term, and those who did suffered severe cervical dystocia. . Abortions and premature labors followed in 55 per cent. of pregnancies after amputation. Seventy per cent. of these patients had difficult labors. Leukorrhea was relieved in nearly 60 per cent., partially relieved in 33 per cent., and unchanged in 7 per cent. It was made worse in 1 per cent. In cases in which there was no leukorrhea before operation, there was discharge in 9 per cent. after both trachelorrhaphy and amputation.

Dickinson [1] calls attention to the fact that while there must be careful adaptation of any particular operative measure to any particular cervix, many of the operative measures may be dispensed with by means of the proper use of the cautery. He says: "In a number of cases where the patient has been obliged to postpone operation for a major condition of the cervix, and this palliative treatment was used to relieve symptoms, I found operation in the end unneeded, because the healing was enduring and the inroll sufficient. Furthermore, any measure that will alleviate office treatment and obviate the pelvic obsession of the chronic office habitué is to be welcomed."

CAUTERY

Before discussing cauterization of the cervix, I shall review the pathology of cervical erosions in order that the logic of cauterization may be seen, and also to show that when properly executed, very little scar tissue should result. Polak states that nearly one half of the cervical lacerations heal spontaneously. This is true if no infection sets in, and if the laceration is not extensive. When the tears are more or less extensive and infection sets in, there is healing by granulation, and scar tissue develops at the angles. The cervical glands become infected and the lips are rolled out, everting the mucosa and exposing it to continued irritation. The cervical columnar epithelium is thus stimulated to active proliferation, and the hyperplastic thickened mucosa pushes itself out on the vaginal portion of the cervix. The everted surfaces present an angry, swollen appearance called an erosion, but which really is an overgrowth of tissue from the cervical canal covered with a single layer of columnar epithelium. The mucous membrane of the everted cervix is nearly always infected, and frequently shows microscopically a necrosis and desquamation of the superficial epithelium. The surface bleeds easily on touch, and it is this condition that should be called "erosion." The interference with the circulation by the scar tissue and the infection present causes a hyperemia and edema of the tissue. The activity of the cervical glands increases, causing a leukorrhea, at first mucoid, but later mucopurulent. The swelling and hyperplasia of the tissues block the ducts of the cervical glands, and retention or nabothian cysts result. In the partial healing of erosions, the squamous epithelium of the vaginal portion of the cervix grows into the ducts of the glands and also causes the formation of nabothian cysts. As the lymphatics of the cervix are continuous with the uterus and parametrium, it can readily be seen that unless the cervical lesion is given attention, chronic subinvolution, chronic metritis, parametritis, pelvic cellulitis, and other painful and permanent pelvic lesions may soon follow.

The method of cauterization described by Dickinson consists in linear incisions of varying depths with the cautery knife. Some discussion followed the report of this work, as to the amount of scar tissue that would result and its effect on pregnancy and labor. Subsequent events have proved all fears of this kind to be unfounded. This was to be expected, as the cautery destroyed only the hyperplastic cervical lining, which was not replaced by scar tissue, but by squamous epithelium from below. Of course, if the cautery penetrates too deeply, then the deeper cervical tissue is destroyed and this is replaced with scar tissue. Deeper cautery and scar tissue replacement is desirable only at the angles of deep lacerations, as the contraction of the granulation tissue tends to invert the everted edges, and the end-result of the whole process is a cervix that is almost nulliparous in appearance.

When Dickinson's paper appeared, I immediately began the use of the cautery in treating cervical lacerations and erosions, but, not being equipped with an electric cautery, tried what I thought would be a makeshift method until I could obtain a better outfit. The results, however, were so good, and the method so simple, that I have found it unnecessary to use any other. The method has been used in several hundred cases both in my private practice and in St. Mary's Dispensary, with almost 100 per cent. of the cases cured as to the appearance of the cervix and the discharge. There were two patients who continued to have a slight discharge, which I feel could have been cleared up with subsequent cauterization, but which caused so little disturbance that the patients did not return for further treatment. The method was not tried in cases in which hypertrophy of the cervix was extreme.

The method consisted in heating uterine dressing forceps to a cherry red heat in a flame, and placing it in the cervical canal, which had first been prepared by gentle dilation and cleansing of all discharge. It is essential that the thick mucus be cleaned away, as this cools the forceps before they have accomplished their purpose. A complete circle of tissue is thus destroyed, less deeply at the internal os and more deeply at the external os, because of the fact that the thin point of the forceps cools more quickly than the thickened shank. One cannot destroy too much tissue in this manner unless it is done by repeated applications, and in this respect it is safer than the electrocautery method.

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[1] Dickinson, R. L.: Am. J. Obst. & Gynec. 2:600 (Dec.) 1921.

The forceps are left in place about two or three seconds; on removal, a white area of necrotic tissue can be seen. Occasionally, there will be a slight bleeding, but not sufficient to cause alarm. An exudate is thrown out, and in the next day or two a necrotic plug can be seen in the cervical canal. This, if undisturbed, remains in place from about ten days to two weeks, and at this time the squamous epithelium can be seen growing toward the cervical canal, which appears bright red and without the mucous discharge. At the end of the first month, in mild cases, the entire eroded area is covered, and the cervix normal in appearance.

In the more extensive erosion the process must be repeated once or twice, as not all the pathologic tissue will be destroyed and has everted again before the surface can be covered with squamous epithelium. The time of healing varies from one month in the mild cases to two and a half months in the most extensive cases.

When I first began using this method, thin layers of damp cotton were applied to the vagina to avoid burning the patient, but this was given up, as I became more certain of my aim. If done quickly, the heat of the instrument in the vagina is not noticed. No local anesthetic is necessary, as the only pain complained of is one severe cramp in the abdomen while the forceps are in place, due to a spastic contraction of the uterus.

As with the electrocautery, the method requires no after-treatment, but merely observation about every two weeks. The method is so simple, and the result so invariably good, that no one need feel handicapped because he has no electrocautery outfit. The only contraindication to the method, as I have seen it, is in early cases of acute gonorrheal infection, when this rather drastic method may cause upward extension of the infection.

Dickinson gave seven classes of cases responding to cautery treatment: (1) rough and extensive granulation with eversion; (2) cysts, superficial or deep; (3) voluminous, adhesive mucous catarrh of the canal; (4) gonorrheal free secretions with thickened lining; (5) between birth erosion with laceration; (6) physical conditions precluding operations, and (7) marked endocervicitis in virgins. I feel that the indications can safely be extended to all inflammatory lesions of the cervix, as even the worst case, with extreme hypertrophy which may later need an operation, will be so improved that the operative procedure is made more simple and successful.

CONCLUSIONS

1. The cautery method of treatment is the method of choice in lacerations and inflammatory cervical lesions.
2. The method described is simple, efficient, and universally accessible.
3. The results, with the method properly applied, are excellent.
4. There is no cervical dystocia following its use.

Diagnosis of Cancer.—Cancer of the stomach should be suspected in any patient, especially over 35 years of age, who suffers from obstinate dyspepsia with anorexia, wasting, anemia, pain, vomiting (especially coffee-grounds), and achlorhydria. It should be remembered, however, that not more than 50 per cent. of early cancers of the stomach show achlorhydria, and that in over 25 per cent. free hydrochloric acid is either normal or excessive.—Rowland, R. P.: *Brit. M. J.* **1**:587 (March 28) 1925.

THE GROWTH, DEVELOPMENT AND PROGNOSIS OF DIABETIC CHILDREN *

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In former days on the death of a diabetic child, one felt at least that he had done his duty; but now when confronted with living diabetic children, one is not so sure. One cannot help asking, Will these precocious children grow, will they develop, or must one look forward to a stunted and nonmaturing section of society? Our purpose in this paper is to present the problem, not to solve it, and to stimulate investigations during the coming year which will enable diabetic children to grow in height as well as in weight and to go on to manhood and womanhood. Here are opportunities for the pediatrician, the dietitian and the endocrinologist.

THE MATERIAL

To show the present status of the question and to furnish some sort of basis for future studies, we have assembled our data for the last twenty-seven years, represented by 351 children in whom diabetes began before they were 15 years old. Close scrutiny of these cases, however, led to the exclusion of forty-nine of them, either because the original diagnosis was wrong or because they were doubtful or potential cases of diabetes, or cases of renal glycosuria. There remained 302 bona fide diabetic children. Of these, 162 died and 132 are alive. Six of the original 351 as yet have eluded our secretarial detectives, and two others are dead, but the date of death is unknown.

GROWTH WITHOUT INSULIN

If a diabetic child gained weight before the discovery of insulin, it was considered an extraordinary event. When it did occur it was temporary, and the weight quickly fell to below that at onset. The advent of undernutrition doubled the children's lives at the expense of their weights. The data for twenty selected patients are unusually complete during the two years of their diabetes before they were given insulin. Not one of these patients exhibited a gain in weight. At present the situation is different, because we have twelve living diabetic children who are not yet taking insulin, and these have shown an average gain in weight of 4.9 pounds (2.2 kg.) a year for an average period of 3.6 years. These are obviously mild or exceptional cases. Like our class of doubtful diabetic, potential diabetic and renal glycosuric patients, they deserve special observation, because among these a severe diabetes may appear later, or there may lurk a diabetic patient who is a "cure" or a "near-cure."

An increase in height before the use of insulin was observed in one of the twenty cases cited in the preceding paragraph. Some significance is to be accorded to this isolated observation, because the pediatricians tell us that the impulse for gain in height is stronger than that for gain in weight, and that it is common for a child to grow thin in order to grow tall. It is not strange, therefore, that the records of twelve living children who are not taking insulin show an average gain in height of 5.3 inches (13 cm.) during an average period of 3.6 years.

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* From the New England Deaconess Hospital.

* Chairman's address, read before the Section on Practice of Medicine at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

GROWTH WITH INSULIN

The weight of the diabetic child treated with insulin increases. This holds for each of the three five year periods up to 15 years. The number of pounds gained increases with the age of the child and is greatest, as in health, at the period between 10 and 14 years, when it averaged 17.1 pounds (8 kg.) for seventeen patients, during an average of eighteen months of insulin, and 19.2 pounds (9 kg.) for nineteen patients during an average of twenty-eight months of insulin.

TABLE 1.—*Increase in Weight and Height*

	Period 1. Age at Onset, 1-4 Years					
	Diabetic Children				Normal Children: Calculated	
Growth	12-23 Months of Insulin, Av. 18 Mos		24-33 Months of Insulin, Av. 28 Mos.		18 Mos.	28 Mos.
Wt., Av. gain......	3 cases	5 9 lbs.	11 cases	15.3 lbs.	6 lbs.	9.3 lbs.
Ht., Av. gain......	2 cases	4.5 in.	10 cases	3.7 in.	4.5 in.	7 in.
	Period 2. Age at Onset, 5-9 Years					
Wt., Av. gain......	14 cases	8.9 lbs.	18 cases	20 9 lbs.	6 9 lbs.	12.7 lbs.
Ht., Av. gain......	13 cases	2.3 in.	15 cases	3 6 in.	3 in.	4.7 in.
	Period 3. Age at Onset, 10-14 Years					
Wt., Av. gain......	17 cases	17.1 lbs.	19 cases	19.2 lbs.	11.6 lbs.	18 3 lbs.
Ht., Av. gain......	15 cases	1.2 in.	14 cases	1.2 in.	3 in.	4.7 in.
	Summary					
Wt., Av. gain......	82 cases		16.4 lbs.		11 7 lbs.	
Ht., Av. gain......	69 cases		2.3 in		4.3 in.	

The increase in weight of thirty-four diabetic children treated with insulin over an average period of eighteen months excelled that of the normal child for the same length of time. This applied to each of the three five-year periods up to 15 years of age, and holds true as well for the forty-eight patients who were treated twenty-eight months.

The rate of growth appeared to be more rapid, the longer the insulin was used up to 10 years of age. For those patients between 10 and 14 years, the weight increased so rapidly during the first eighteen months of insulin that it was hardly to be expected that it could progress as rapidly the next ten months. One must be very cautious in the interpretation of this extra growth as a result of prolonged insulin medication, because dosage of insulin and variation in tolerance for carbohydrate may enter into it. In another paper the data will be analyzed to show the influence of these factors.

INCREASE IN HEIGHT

An increase in height is present in the insulin-treated diabetic child, but it is distinctly less than that of the normal child. A gain in height equal to the normal did take place in one of the five year groups of cases treated with insulin for twenty-eight months, but it did not appear in the others. It is less easy to measure the height of a child than the weight, and we feel that one should be very slow before drawing conclusions, until observations are continued over longer periods of time. We know from feeding experiments on animals that growth may be retarded for months and later redeemed.

TWENTY SELECTED CASES

The foregoing data for weight and height are derived from eighty-seven diabetic patients taking insulin. From these we selected twenty cases, largely Woodyatt's so-called "pedigreed" diabetic patients, and these we now present. The average duration of the disease in these cases is 4.4 years, the average age at onset 5.4 years, and they have been taking insulin on the average for thirty months. During the insulin period, all the patients gained weight, and their average gain in weight has been 10.4 pounds (4.7 kg.) as contrasted with a calculated normal gain for a child of 9.8 years of 12 pounds (5.4 kg.) in the same period. The greatest gain was 21 pounds (9.5 kg.); the least was 3 pounds (1.4 kg.). The gain in height has been 2.5 inches (6 cm.) in contrast to 5.2 inches (13 cm.) for the normal child. One of our children gained 5 inches (12.7 cm.). There were two children whose height remained unchanged.

The diets of these twenty children in the preinsulin and insulin periods were essentially the same, save for an increase in the total calories due to fat. The carbohydrate increased 5 gm., from 49 gm. to 54 gm.; the protein was 2.5 gm. per kilogram of body weight in the early period, and in the present is 2.4 gm. The calories have risen from 42 to 58 per kilogram of body weight. Insulin has been increased in 60 per cent. of these cases, unchanged in 20 per cent., and decreased in 20 per cent. It is notable that the two patients who gained most in height and weight were those in whom the insulin was reduced. The patients who required increasing insulin dosage were the ones who showed the least gain in height.

Growth in weight and height have thus far been considered, but it is worth while also to compare the living diabetic child today with the normal child, wholly apart from growth. If this is done, one finds that now our children average only 6.2 pounds (2.8 kg.) under weight for their age and height, insulin has helped to raise their nutrition so nearly to normal. It is a question whether one dares to raise it still more. What is more surprising is the fact that their average height, which one would expect from this deficient growth in height to be low, is but 0.6 inch under normal for weight and age. This anomaly is explained by the circumstance that when these children acquired diabetes, they were above normal in height, and they have not lived long enough yet to be short for their age. The short diabetic child, one pictures in one's mind, has been diabetic for many years.

Can diet do more for these short diabetic children, or must they seek the aid of the endocrinologist? We feel that diet and time should be given further trial. Others may think differently. The data a year hence on these children will be more valuable.

DEVELOPMENT

Unaided by insulin, no girl in our series developed menstruation after the onset of diabetes. In one girl, Patient 304, menstruation and diabetes began together and lasted for eight years until death from coma. Since the use of insulin, four girls have begun to menstruate for the first time, and in another the onset of menstruation and diabetes were simultaneous. Of the four girls who began to menstruate after diabetes developed, one was 17, six and a half years after her diabetes began; one was 16, five years after diabetes began; one was 14, two months after onset, and the remaining girl was 13, with diabetes of one year's duration. In these four cases, menstruation was established from one year to two months after insulin was commenced. Menstruation ceased in six patients without insulin treatment, or became irregular soon after the onset of diabetes.

The appearance of the boys has so changed that there is little doubt of their having matured.

Diabetic children can mature, do mature and are apt to mature late, but maturity is still an unusual occurrence. Time is an important factor. If an additional four children develop sexually during the coming year, apprehension for the maturity of the remainder will in great measure cease.

Here, again, the endocrinologist has an opportunity to show his powers.

PROGNOSIS

Unless a child lives, it is futile to talk of growth or development. Of the 164 children treated without insulin, there remain but twelve alive. To be sure, the duration of the disease in this dozen is 5.2 years; but these are the exceptional cases, the milder ones, and indeed too few in number to allow foundation for favorable prediction. The 152 patients who died survived 2.4 years, and that constitutes the prognosis of the noninsulin-treated diabetic child—the duration of the disease to which we can refer as our base line.

TABLE 2.—*Duration of Life of Diabetic Children*

	No Insulin		Insulin Used	
	Living	Dead	Living	Dead
Period 1. Age at Onset, 1-4 Years:				
Cases	2	37	21	0
Duration, years	5.7	2.5	2.6	..
Period 2. Age at Onset, 5-9 Years:				
Cases	5	50	49	2
Duration, years	6.0	2.1	3.3	3.2
Period 3. Age at Onset, 10-14 Years:				
Cases	5	65	50	8
Duration, years	3.7	2.5	3.1	2.5
Summary. Age at Onset, 1-14 Years:				
Cases	12	152	120	10
Duration, years	5.2	2.4	3.1	2.7

Now for the other side of the story: Of 130 children treated with insulin between August, 1922, and March, 1925, 120 are living. Formerly it was the exception for a diabetic child to live; now it is equally exceptional for him to die. Hence, the novel problems which the living diabetic child intrudes into our practice this year. But in all the various attempts one makes to promote growth and maturity, remember it is for naught, if one does not first of all guard the diabetic child from diabetic accidents and preserve his life.

Will the diabetic child continue to live? To this one can answer first that already a goodly number, twenty, of those first treated with insulin have lived for 4.4 years and are in far better condition now than when they began insulin, two and one-half years ago. And, for that matter, the 120 have already lived 3.1 years. But there is other evidence. Forty per cent. of these selected patients have either not increased, or have actually decreased their insulin. It is possible that the same methods of treatment applied to the 60 per cent. who are taking more insulin would have rendered this unnecessary.

Finally, there is the pathologic evidence which Boyd and Robinson first published; namely, the demonstration of the regeneration of island cells. To this we can add, for Shields Warren and Howard Root[1] are to report twenty-six necropsies on diabetic patients which to some extent show that regeneration of the pancreas takes place more in the subsequent years than in the early years of the disease.

This affords confirmation of the clinical statement that if the diabetic patient survives the first year of his disease, the diabetic danger zone, he has a far better chance to live many years, because regeneration of the pancreas has begun.

CONCLUSIONS

1. The gain in weight of the diabetic child treated with insulin resembles that of the normal child, but the diabetic child is still underweight for his age, though often not for his height.
2. The increase in height of the diabetic child treated with insulin, though occasionally normal, is usually below that of the normal child. So far he has not grown tall like the normal child, either at the expense of growing thin, or while being well nourished.
3. The sexual development of the diabetic child appears assured.
4. The prognosis of the diabetic child treated with insulin is still problematic, but clinical, therapeutic and pathologic evidence sets no bounds.

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[1] Shields Warren and Root: J. Path. & Bacteriol., to be published.

DISSECTING ANEURYSM WITH SIGNS OF AORTIC INSUFFICIENCY

REPORT OF A CASE IN WHICH THE AORTIC VALVES WERE NORMAL *

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In a recently observed case of dissecting aneurysm there were present during life the typical signs of aortic insufficiency; at necropsy the aortic valves were found to be normal. Similar cases have been described by Börger,[1] Busse,[2] and Letulle.[3] In a few of the cases of dissecting aneurysm collected by Moreau[4] there were observed signs which may have been interpreted as being due to aortic insufficiency; but the anatomic findings are too inadequately detailed to allow one to judge of the condition of the aortic valves. We have not attempted to investigate the entire literature of dissecting aneurysm, which now comprises the reports of about 300 cases. It should be pointed out that in most instances death occurs so soon after the development of the lesion, usually as the result of perforation into the pericardium or pleural cavities, that satisfactory clinical observations have not been possible. Moreover, of the small group of cases (approximately fifty) in which recovery has taken place by reperforation into the arterial system, usually into the aorta, several cases have been discovered as necropsy specimens without clinical data. We have reviewed the histories of about half the number of so-called healed cases, and have encountered those instances which we have mentioned above in which signs of aortic insufficiency were present without valvular lesion. We wish to call attention, therefore, to the fact that these findings are not altogether uncommon in those cases of dissecting aneurysm in which recovery ensues, at least temporarily, owing to reentrance of the aneurysm into the aorta.

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[1] Borger, H.: Ueber einen Fall von geheiltem Aneurysma dissecans der Aorta, Ztschr. f. klin. Med. **58**: 282, 1906.

[2] Busse, O.: Ueber Zerreissungen und traumatische Aneurysmen der Aorta, Virchows Arch. f. path. Anat. **183**: 440, 1906.

[3] Letulle, M.: Anévrisme disséquant étendu à la totalité de l'aorte et spontanément guéri; signes d'insuffisance aortique avec integrité parfaite des valvules sigmoïdes, Bull. et mém. Soc. méd. d. hôp. de Paris **22**: 1045, 1905.

[4] Moreau, E.: Contribution a l'étude des anéurysmes disséquants de la crosse de l'aorte, Paris, 1907.

REPORT OF CASE

History.—J. P., a colored laborer, aged 57, was admitted, Jan. 26, 1924, to Johns Hopkins Hospital, because of shortness of breath and pain in the abdomen. There was no history of syphilis. His health had been excellent except that there may have been some slight dyspnea on exertion for a short time before the onset of the illness that brought him to the hospital. About four weeks before, while walking to work, he was seized with a sudden dull aching pain behind the sternum and about the umbilicus. The pain stopped temporarily, but the moment he started to walk the attack came on again, and he lost consciousness for about ten hours. Since then he had remained in bed, suffering almost continuously from retrosternal and abdominal pain, hot flushes, cold sweats, and cramps in his legs. Just before his attack he had had a little swelling of the eyelids, which was said to have returned afterward. About two weeks later, the attacks of dyspnea became worse and the patient became orthopneic. During the last three weeks there was a severe cough, productive of bloody sputum. For two weeks there had been palpitation, and tenderness over the precordium, especially in the apical area; later he suffered from ringing in his ears, blurring of vision and occasional delirium.

The patient was unconscious on admission; there was marked dyspnea and orthopnea, and the respirations were Cheyne-Stokes in character. There was frequent cough, with frothy bloody expectoration. The cervical veins were distended. There was conspicuous pulsation of the superficial arteries. The bases of the lungs showed evidences of congestion, and coarse râles were heard throughout the chest.

The apex of the heart was in the sixth interspace, 15 cm. from the median line; it was moderately forceful. The right border was 5 cm. from the median line by percussion. There was a loud to and fro murmur over the aortic area; the systolic murmur was heard in the vessels of the neck, and the diastolic along the left sternal border. The heart action was regular. The radial arteries were thickened and somewhat tortuous. The pulses were markedly water-hammer in quality, a capillary pulse was visible in the finger-nail beds, and a pistol shot sound was audible over the brachial and femoral arteries. The double murmur of Durosiez was heard on compression of the femorals. The blood pressure was 145 systolic and 40 diastolic.

Except for some rigidity of the right rectus muscle, the abdominal examination was negative. The liver and spleen were not palpable. There were no noteworthy abnormalities in the extremities or reflexes. There was a moderate degree of sacral edema.

There were 15,000 white blood cells per cubic millimeter, 81 per cent. of these being polymorphonuclear leukocytes. The urine contained a small amount of albumin and a few casts. The blood Wassermann reaction was negative.

Two days later the patient was less ill, and consciousness was regained. His pulse was totally irregular; an electrocardiogram showed auricular fibrillation and left ventricular preponderance; the T wave in Lead I was inverted. On the following day there was a spontaneous reversion to normal mechanism; the P-R interval was 0.19 second. On this day he complained of a severe pain over the left side of the chest, and a pleural friction rub was heard over this area. On the following day, January 30, he became comatose again and died. Throughout his short stay in the ward, there was a fever ranging between 99.5 and 104 F. A questionable pericardial friction rub was heard by one observer.

The diagnosis was not clear, but it was generally thought that the patient, with aortic insufficiency dependent on either arteriosclerotic or syphilitic changes in the aortic valves, had had a coronary occlusion, which was followed by myocardial infarction and thrombosis and pulmonary embolism.

Anatomic Diagnosis.—Dr. A. R. Rich performed the necropsy, which revealed: *a dissecting aneurysm* involving the entire aorta and many of its branches, with a thrombus in the cleft along the left iliac artery; hypertrophy of the heart; fibrinous pericarditis; pulmonary and renal infarcts; hydrothorax; chronic passive congestion of the viscera, and cirrhosis of the liver.[5]

The pericardium was covered with a slight fibrinous pericarditis. The heart was rather large, weighing 680 gm. The valves were normal. The aortic valve measured 8.5 cm. The coronary arteries were not sclerotic, nor was the aorta sclerotic to any significant degree. The internal lining of the aorta revealed nothing suggestive of syphilis. Just above the aortic valves there was a sharp transverse break in the intima 3 cm. in length. A second sharp transverse cut, 1.5 cm. in length, was found a few centimeters below. These extended to the media, which was slit down to the bifurcation of the aorta. The dissecting aneurysm was lined with endothelium.

There were several thrombi in branches of the pulmonary arteries, and the lungs contained several large infarcts and diffuse early pneumonia. There were patches of fibrinous exudate on the pleural surfaces. With the exception of a nodular cirrhosis of the liver, the rest of the organs were essentially normal. No definite cause for the dissecting aneurysm was found.

COMMENT

We do not propose to enter into a detailed description of the clinical history and course of dissecting aneurysm, for this has been adequately done in the papers of Peacock[6] and more recently by Moosberger.[7] We shall mention briefly the outstanding features of the typical case. Usually the patient is a man, between 40 and 60 years of age, whose previous health has been good. He is suddenly seized with a violent tearing pain behind the sternum and perhaps in the abdomen. the attack often coming on during some severe muscular effort. Collapse frequently occurs soon after the onset of the attack, sometimes as the initial symptom. In a large number of cases, death occurs within a very short time; or, on recovery from the symptoms of shock, the patient may experience severe pains behind the sternum, more or less continuous, associated with marked dyspnea, and the patient succumbs, usually suddenly, in a day or two. In these cases the cause of the fatal outcome has been the perforation of the dissecting aneurysm, most frequently into the pericardium (the rupture of the aorta occurring commonly within a few centimeters of the aortic valves), less often into the left pleural cavity.

In a small percentage of cases, recovery takes place following the establishment of a second opening between the dissecting aneurysm and the aorta, the walls of the aneurysm eventually becoming lined with endothelium. To these cases the term "healed" has been applied.

For obvious reasons, the diagnosis of the condition is difficult, attested by the fact that there are reports of only four or five cases in which it has been correctly made during life.[7] The condition is rare; in acute cases, death usually occurs before satisfactory observations are possible; and ordinarily the clinical picture presents no characteristic diagnostic features. In many respects there is a close similarity between these cases and those of coronary occlusion. Probably the best lead to a correct diagnosis is the discovery of inequality of pulses, usually in the arms, or of other signs of mediastinal pressure, these having developed rapidly in a patient whose symptoms have been such as we have described above.

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[5] This lesion probably accounts for the failure of the liver to become sufficiently enlarged to be detected clinically.

[6] Peacock, T. B.: Report on Cases of Dissecting Aneurysm, Tr. Path. Soc. London **14**: 87, 1863.

[7] Moosberger, W.: Zur symptomatologie des Aneurysma dissecans, Schweiz. med. Wchnschr. **54**: 325 (April 3) 1924.

We were particularly interested to seek an explanation for the occurrence of the signs of aortic insufficiency in the absence of organic valvular change. The peripheral signs of aortic insufficiency are also found in cases of arteriovenous fistula when the aortic valves are normal, and Lewis and Drury [8] have presented evidence to show that some of these phenomena, namely, the high pulse pressure and the water-hammer and collapsing qualities of the pulses, are dependent on a leak of blood from the arterial to the venous systems. Other signs, such as Hill and Rowland's differential pressure sign and the capillary pulse, were shown to be consecutive to the changes in the arterial pulse and due to unknown factors. It has seemed to us not improbable that similar explanations may be applicable to the peripheral circulatory signs present in some cases of dissecting aneurysm, the leak of blood occurring from the main arterial channels into the accessory channels formed by the dissecting aneurysm. The presence or absence of these findings may conceivably be dependent on the size and direction of the openings from the aorta into the dissecting aneurysm, these factors determining whether or not a sufficiently large amount of blood is diverted from the aorta to allow of the development of the typical peripheral signs of aortic insufficiency. It was to such a regurgitation of blood into the aneurysmal cavity that Letulle ascribed the occurrence of the signs of aortic insufficiency in his case. If the peripheral signs of aortic incompetence were actually due to a leak of blood into the aneurysm through the breaks in the intima, it is also possible to explain the presence and apparently typical propagation of the diastolic murmur, since the openings in the intima lay just above the aortic valves.

The heart of our patient was conspicuously enlarged, and this has been true in many of the cases of dissecting aneurysm in which recovery has taken place. In some of these there has been present an obvious cause for cardiac enlargement; in others, the cause has not been clear. In either case, it has been noted that patients who have recovered after the initial stormy symptoms and who later at postmortem examination have been shown to have dissecting aneurysm have frequently died of myocardial failure, an observation made many years ago by Peacock. Moreover, in a few of the instances in which it has been possible to examine patients from the onset of acute symptoms to the time of death, perhaps months later, progressive enlargement of the heart has been observed. This finding offers another analogy between these cases of dissecting aneurysm and arteriovenous fistula, in which condition cardiac enlargement is commonly found. From their study of arteriovenous fistula in man, Lewis and Drury suggested that this enlargement, primarily a dilatation, was caused by malnutrition of the heart muscle, due to a lowering of mean arterial pressure. Harrison, Dock and Holman [9] have demonstrated experimentally that there is an increased circulatory minute volume in arteriovenous fistula, so that one must also consider the possibility of increased work of the heart being a factor in the cardiac dilatation and hypertrophy of this condition. How far either or both of these factors, namely, diminished coronary flow and increased work of the heart, play a rôle in the cardiac enlargement of dissecting aneurysm we have no definite knowledge. The similarity in other respects between cases of arteriovenous fistula and of dissecting aneurysm (such as we have described) suggests that the same influences may be present in the two instances.

We have deferred discussing the obvious possibility that in a case such as we have described there may have existed an actual relative aortic insufficiency. In the large majority of cases, such a condition depends on widening of the aortic ring due to structural change in the aortic wall. This was absent in our case; the measurement of the aortic valve was normal for the patient's age. Rarely relative aortic insufficiency is due to weakness of the musculature supporting the aortic ring.[10] If our assumption is correct, however, that the rapid progression of myocardial failure was due, in part at least, to malnutrition of the heart muscle, and this in turn was due to a fall in mean arterial pressure, one must conclude that if there was some degree of relaxation of musculature about the aortic ring, this change must have been a secondary one, and dependent on the previously present fall in diastolic pressure.

CEREBROSPINAL FLUID AS INDEX OF OTORHINOGENIC INTRACRANIAL COMPLICATIONS *

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This study is based on cases observed at Cook County Hospital, consisting of 155 cases of meningitis, forty-three cases of lateral sinus thrombosis, thirty-five cases of brain abscess, eight cases of labyrinthitis, four cases of extradural abscess, two cases of cavernous sinus thrombosis and one case of subdural abscess.

The normal cerebrospinal fluid is a clear, colorless, sterile fluid, under normal pressure, containing sugar but no globulin and in the adult not more than 8 lymphocytes per cubic millimeter. McLean [1] states that in children, the average is 4 lymphocytes but that as many as 20 lymphocytes may be found in a normal child.

The results of the examination of the cerebrospinal fluid in these cases may be conveniently divided into two groups: Those presenting negative, or normal, cerebrospinal fluid findings, and those presenting positive, or pathologic, cerebrospinal fluid findings.

CASES PRESENTING NORMAL CEREBROSPINAL FLUID FINDINGS

In acute and chronic suppurative otitis media, mastoiditis and nasal sinusitis not complicated by meningitis, extradural abscess, subdural abscess or brain abscess; in thrombosis of the lateral sinus and jugular bulb, cavernous sinus thrombosis, labyrinthitis and acute toxic meningo-encephalitis unassociated with the foregoing intracranial complications. The cerebrospinal fluid is normal in meningismus, which may be mistaken for meningitis especially in infants and young children with pneumonia or an acute suppurative otitis media.

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[8] Lewis, T., and Drury, A. N.: Observations Relating to Arteriovenous Aneurysm; Circulatory Manifestations in Clinical Cases with Particular Reference to Arterial Phenomena of Aortic Regurgitation, Heart **10**: 301 (Oct.) 1923.

[9] Harrison, T. R.; Dock, W., and Holman, E.: Experimental Studies in Arteriovenous Fistulae: Cardiac Output, Heart **11**: 337 (Dec.) 1924.

[10] Anders, J. A.: Relative Aortic Incompetency of Muscular Origin, Bull. Johns Hopkins Hosp. **20**: 205 (July) 1909.

* From the Otorhinolaryngologic Department of Cook County Hospital.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

[1] McLean, S.: The Cerebrospinal Fluid in Infants and Young Children in Conditions Other Than Acute Meningitis, Am. J. M. Sc. **166**: 350 (Sept.) 1923.

CASES PRESENTING PATHOLOGIC CEREBROSPINAL FLUID FINDINGS

A. *Meningitis.*—Of 155 cases in which the amount of the cell count was recorded, thirty-eight cases of otitic meningitis had a cell count that was below 5,000 cells in 50 per cent.; of seventy-seven cases of meningitis of undetermined origin, the cell count was below 5,000 cells in 67 per cent.; and of forty cases of epidemic meningitis, the cell count was below 5,000 cells in 72 per cent. Meningitis may be clinically classified according to the cytology and bacteriology of the cerebrospinal fluid, as follows:

(*a*) As to the presence of a clear or cloudy cerebrospinal fluid:

1. Serous meningitis (thirty-six cases). The cerebrospinal fluid is under increased pressure, is clear, is colorless and contains from 15 to 250 cells per cubic millimeter, mostly lymphocytes (but polymorphonuclears may be in the majority). Globulin tests are usually positive, and sugar is usually absent. Serous meningitis may be associated with extradural abscess, brain abscess, syphilitic meningitis, tuberculous meningitis, cerebrospinal syphilis, epidemic encephalitis, poliomyelitis, acute toxic meningo-encephalitis and with the acute respiratory infections in children. McLean,[1] in a study of sixty-seven cases of acute respiratory infections in children, found that five had a cell count of 30 or more and four had more than 60 cells per cubic millimeter.

2. Suppurative meningitis (119 cases). The cerebrospinal fluid is under increased pressure. It is turbid, varying from a recognizable cloudiness to purulence, the cell count being proportionate to the degree of turbidity present from 250 cells upward into the hundreds of thousands and consisting mostly of polymorphonuclears. Globulin tests are markedly positive, and sugar is absent. Suppurative meningitis may be associated with subdural abscess, or brain abscess when the cell count is low or moderate; a very high cell count nearly always signifies the presence of an acute diffuse suppurative meningitis.

(*b*) As to the extent and character of meningeal involvement:

1. Diffuse meningitis. (1) Serous: The cerebrospinal fluid is clear, but has a cellular increase and bacteria are found. In eleven cases out of the thirty-six cases in which the cell count was 250 or less, or in 30 per cent, bacteria were found. (2) Suppurative: The cerebrospinal fluid is cloudy. There are two groups: In one, bacteria are found; in the other, bacteria are not demonstrable; both have associated a high cell count, from 5,000 cells and upward.

2. Circumscribed meningitis. (The cerebrospinal fluid is sterile.) (1) Serous: The cerebrospinal fluid is clear, but the cell count is increased up to 250. (2) Suppurative: The cerebrospinal fluid is cloudy, and the cell count is increased from 250 to 5,000 cells. This group is identical with that termed protective meningitis[2] or sympathetic meningitis,[3] and may be found associated with a brain abscess.

In twenty-six cases of diffuse meningitis (eleven serous and fifteen suppurative) in which bacteria were found either by direct smear or by culture, and in which the cell count was 600 or less, ranging from 30 to 600 cells, and averaging 318 cells per cubic millimeter, eight patients, or 30 per cent. recovered. The cell counts in the patients who recovered were 30, 110, 120, 135, 141, 270, 500 and 513. Friedländer's bacillus was found on culture in the case presenting 30 cells; the staphylococcus was found on culture in the cases presenting 135, 141 and 270 cells; the streptococcus was found on culture in the cases presenting 110 and 270 cells; the meningococcus was found in the case presenting 500 cells, and gram-positive diplococci were found in the cases presenting 120 and 513 cells.

B. *Brain Abscess.*—In twenty-four cases of otorhinogenic brain abscess in which the diagnosis was confirmed either by operation or at necropsy, the cell count was under 500 cells in 95 per cent. of the cases. The cell count ranged from 5 to 2,300 cells and averaged 256 cells; it was 8 or less in 12.5 per cent; 25 or less in 25 per cent, and 50 or less in 41 per cent.; 100 or less in 55 per cent. The cell count ranged from 100 to 500 cells in 40 per cent.

There were seven cases of brain abscess complicated by an acute diffuse suppurative meningitis that were not included in the foregoing group in which the polymorphonucleosis was pronounced, ranging from 11,000 to 56,000 cells and averaging more than 25,000 cells.

Results of cytologic examination of the cerebrospinal fluid associated with brain abscess were as follows:

1. Associated with a normal cerebrospinal fluid there were eight cases. The diagnosis was made at operation or necropsy. There were three cases of brain abscess that were found at necropsy unassociated with a meningitis.

2. Associated with a circumscribed meningitis there were two groups: (*a*) Serous meningitis: In 55 per cent. of the twenty-four cases of brain abscess in which the diagnosis was confirmed either by operation or at necropsy, the cell count was less than 100 cells. (*b*) Suppurative meningitis: The cell count ranged between 100 and 500 cells in 40 per cent of the twenty-four cases of brain abscess.

3. There were seven cases associated with a diffuse suppurative meningitis among the twenty-four cases of brain abscess.

4. Extradural abscess is usually associated with the cerebrospinal fluid findings of a circumscribed serous meningitis. In one case, the cerebrospinal fluid was normal. In four cases, the cell count was 20, 25, 33 and 52, consisting mostly of lymphocytes, with globulin slightly positive or positive and the fluid sterile.

5. Subdural abscess was found at operation associated with an extradural abscess in two cases; in one case, the cell count was 2,160, mostly polymorphonuclears; in the other case, the cell count was 78 lymphocytes. In both cases a circumscribed meningitis was present; in the former a suppurative, and in the latter a serous, meningitis.

6. Two cases of cavernous sinus thrombosis secondary to suppurative sphenoiditis were observed; one was associated with an extradural abscess, with a cell count of 33; the other with a diffuse suppurative meningitis, with a cell count of 400.

7. Three cases of lateral sinus thrombosis had associated a perisinuous abscess and a periphlebitis with a cell count of 20, 25 and 33. Of the twelve cases that were associated with meningitis, the cell count was less than 500 in 25 per cent.; from 1,000 to 5,000 to 42 per cent.; from 5,000 to 10,000 in 17 per cent., and from 10,000 to 100,000 in 16 per cent. The cell count was below 1,000 in 67 per cent. of the cases. All but one case in which the cell count was pathologic were

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[2] Eagleton, W. P.: Operative Treatment of Suppurative Meningitis, Laryngoscope 32:1 (Jan.) 1922.

[3] Plaut and Schottmüller Leitfaden zur Untersuchung der Zerebrospinalflüssigkeit, quoted by Strauss, I.: Meningitis Sympathetica, Am. J. M. Sc. 154:748 (Nov.) 1917.

fatal; in the case in which the patient recovered, the cell count was 15.

CYTOLOGY AND BACTERIOLOGY OF CEREBROSPINAL FLUID IN PATIENTS THAT RECOVERED

1. *Meningitis.*—Of the 155 cases of meningitis of all types, recovery occurred in only nineteen, a mortality of 88 per cent. The mortality in thirty-eight cases of otitic meningitis was 95 per cent.; in forty cases of epidemic meningitis, 87.5 per cent.; in seventy-seven cases of meningitis of undetermined origin, 90 per cent.; and in thirty-six cases of serous meningitis, 84 per cent. Of the thirty-six patients with serous meningitis (with a cell count less than 250 cells), six recovered, or 17 per cent.; the cell counts ranged from 15 to 141 cells, and bacteria were found on culture in 50 per cent. of the cases. Of 119 patients with suppurative meningitis, thirteen recovered, or about 11 per cent.; of these cases, five were cases of epidemic meningitis; two of staphylococcus; one of pneumococcus, and five of undetermined origin. The cell count of the meningococcic group ranged from 770 to 7,760 and in the other group from 400 to 1,400 cells.

2. *Brain Abscess.*—Of the two patients that recovered, one had a cell count of 240, 250, and 650, with globulin positive and sugar absent and fluid sterile; in the other case, the cerebrospinal fluid was normal.

3. *Extradural Abscess.*—In one case associated with an acute suppurative frontal sinusitis and osteomyelitis of the frontal bone plus an acute toxic meningo-encephalitis, the cell count was 52, with globulin positive, sugar absent and the cerebrospinal fluid sterile.

CLINICAL AND NECROPSY FINDINGS IN BRAIN ABSCESS AND MENINGITIS

In a case of brain abscess, previous to the drainage of the abscess the cell count was 60; sixty days later, when an acute diffuse suppurative meningitis occurred, the cell count was 21,000 and streptococci were found in the cerebrospinal fluid. A similar case showed a cell count of 94, and later on the cell count became increased to 56,000 but no bacteria were found. In both cases the cellular increase with the onset of the acute diffuse suppurative meningitis consisted mostly of the polymorphonuclears. The diagnosis of brain abscess was made in a case presenting a cell count of 130 that was confirmed by operation; twenty-four hours later the patient died, and necropsy showed an acute diffuse suppurative meningitis.

The cerebrospinal fluid may be normal in brain abscess, as demonstrated by the two following cases:

In one, two cell counts showed 7 and 4 lymphocytes, with globulin absent; also the clinical signs of meningitis were absent, but there were signs suggestive of an otitic brain abscess, as suppurative otitis media, headache, vertigo, paresis of the face and slow pulse (60). Operation consisted of a mastoidectomy, with exploration of the dura for an extradural abscess but none was found. Necropsy showed a right temporal lobe abscess.

In the other case, the cell count was five lymphocytes, with globulin absent. A diagnosis of a left temporal lobe abscess was made because of the presence of a sensory aphasia (anomia), vertigo, slow pulse (50) subnormal temperature and headache. Following the drainage of the brain abscess, the patient made an uneventful recovery. A frontal lobe abscess was found at necropsy unassociated with meningitis in a case that showed the clinical signs of meningitis, 450 cells and bilateral choked disk. A cerebellar abscess was found at necropsy unassociated with meningitis in a patient who had a cell count of 2,300.

A case in which there were cell counts of 80,560 and 14,000, with the spinal fluid Wassermann reaction negative but the blood Wassermann reaction positive, showed at necropsy a gumma of the brain but no meningitis. A case in which the cell count was 6,000 showed at necropsy no gross meningitis, but microscopically a meningomyelitis was found. A case in which there was a cell count of 37 showed at necropsy no meningitis. On the other hand, two cases in which there were cell counts of 12 showed at necropsy an acute diffuse suppurative meningitis.

COMMENT

1. *Brain Abscess.*—It is a well known clinical fact that occasionally we find a normal cerebrospinal fluid associated with a brain abscess; this is because the abscess is so situated in the brain substance that it does not cause any meningeal irritation. In this group belongs 12.5 per cent. of the twenty-four cases of brain abscess. Eagleton[4] states that, during the stage of localization of a cerebral suppuration, the cell count is high only in the active stage, and after the abscess is walled off from the meninges and the surrounding cerebral substance, the cell count becomes normal. He also emphasizes the fact that while an increase in the cell count is important in the diagnosis of a brain abscess, its absence should not militate against the probability of an intracranial suppuration being present in a suspicious case.

In 87.5 per cent of the twenty-four cases of brain abscess, a circumscribed meningitis was associated, which was sterile and was either serous or purulent; in the majority of cases it was serous.

It is very rare to have a patient with brain abscess with a high cell count (above 5,000) recover, but Boot,[5] reports two such cases, in one of which there were 6,250 and in the other, 16,300 cells.

During the postoperative course of a brain abscess, frequent examination of the cerebrospinal fluid will give valuable information regarding the progress of the intracranial suppuration. An increase in the cell count will suggest at once the necessity of better surgical drainage, which may be the means of preventing the onset of a fatal meningitis.

2. *Meningitis.*—Nearly all cases of meningitis except those secondary to a bacteremia are circumscribed in the beginning. Circumscribed meningitis is a precursor of diffuse meningitis. It is impossible to differentiate clinically a circumscribed from a diffuse meningitis in all cases. The best clinical test of the presence of a diffuse meningitis is the finding of bacteria in the cerebrospinal fluid. In some cases, the cytologic findings in the cerebrospinal fluid may help in the differentiation; a high cell count points to a diffuse and a low one to a circumscribed meningitis. In the intermediate cases, the distinction becomes more difficult or impossible. The cases that we classify clinically as circumscribed are found at necropsy, not infrequently, to be diffuse. This is more likely to occur in the cases in which only one examination of the cerebrospinal fluid was made, and this days before death.

In order that the examination of the cerebrospinal fluid may be an accurate index of the character and extent of the intracranial suppuration, it should be performed as often as is needed for this purpose. The cerebrospinal fluid may undergo a radical transformation within twenty-four hours. It is especially important that the examination be made at least twenty-four hours before death, that the findings may be compared with fairness with the necropsy findings.

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[4] Eagleton, W. P.: Brain Abscess: Its Surgical Pathology and Operative Technic, New York, the Macmillan Company, p. 161.

[5] Boot, G. W.: Brain Abscess of Otitic Origin, Tr. Am. Acad. Ophth. & Oto-Laryngol., 1920.

The distinction between a serous and a suppurative meningitis is easily made from the appearance of the cerebrospinal fluid; in the former it is clear, while in the latter it is cloudy. In making an arbitrary division between a serous and suppurative meningitis, with regard to the size of the cell count, it was ascertained that most of the cerebrospinal fluids with a cell count above 250 were cloudy, while those below 250 were clear. A distinction between serous and suppurative in many cases is that in the former the cellular increase consists mostly of lymphocytes, while in the latter it is polymorphonuclear. The cases of suppurative meningitis in which there is a high polymorphonucleosis (above 5,000) with a sterile fluid should be considered as diffuse meningitis, because these cases at necropsy show a diffuse meningitis. But it not infrequently happens that a diffuse suppurative meningitis is found at necropsy in which the cell count was 1,000 or less, with or without bacteria. In eleven cases of diffuse suppurative meningitis seen at necropsy, in which cultures of the cerebrospinal fluid had been made during life, bacteria were found in only four cases. It not infrequently happens that cultures of the cerebrospinal fluid are negative during life, but may be positive postmortem.

Of sixty-three cases of otitic meningitis,[6] lumbar puncture was done in fifty-three cases, or 84 per cent.; direct smears were made in forty-two cases and bacteria found in twenty-nine, or 69 per cent.; cultures were made in twenty-five cases and were positive in fourteen, or 56 per cent. Either cultures or direct smears were made in forty-six cases and bacteria found in thirty-one cases, or 67 per cent.

Of sixty cases of otitic meningitis,[7] lumbar puncture was done in thirty-eight cases, or 67 per cent., and bacteriologic examination was recorded in twenty-eight cases and bacteria found in twenty-two cases, or 78 per cent.

Of sixty-one cases of otitic meningitis,[8] bacteria were found in thirty-seven cases, or 60 per cent.

To recapitulate, of a total of 135 cases of otitic meningitis in which a bacteriologic examination of the cerebrospinal fluid was made, bacteria were found in ninety cases, or 67 per cent.

While there are cases in the literature of meningitis with recovery in which the cell count was above 5,000 and the fluid sterile, most of these were either cases of meningococcic or syphilitic meningitis or were associated with brain abscess. Eagleton,[9] in a study of the literature up to 1923, found less than forty cases of nonmeningococcic diffuse meningitis in which the patients recovered. Among sixty-three patients with otitic meningitis[6] observed at Cook County Hospital, only two recovered; one with a cell count of 110, with streptococci in the direct smear and in the culture, the other with a cell count of 400 and fluid sterile. Among sixty patients with otitic meningitis[7] observed at the Massachusetts Charitable Eye and Ear Infirmary, only two recovered: one with a cell count of 800, with fluid sterile, and the other with a cell count of 65,000, the culture showing large cocci in short chains, probably streptococci; at a later puncture, the cerebrospinal fluid was clear, with 270 cells and no growth of bacteria. Among the thirty-six patients with serous meningitis (cell count less than 250), six, or 17 per cent., recovered; of these cases, twenty-five should be classified as circumscribed, because the fluid was sterile, and eleven as diffuse, because bacteria were found in the cerebrospinal fluid. Among the twenty-six patients with serous or purulent meningitis, but with the cell count below 600, and in whom bacteria were found in the cerebrospinal fluid, eight, or 30 per cent., recovered. These twenty-six cases, according to our classification, all belong to the diffuse type of meningitis. Singer[10] states that a circumscribed meningitis is not infrequently associated with bacteria in the cerebrospinal fluid, associated with low cell counts, and these are the cases that constitute the bulk of the reported cures of meningitis.

How can the relatively low mortality rate in this group of cases be explained? If we can eliminate accidental bacteriologic contamination or other technical error, we shall have to assume that the virulence of the infecting micro-organism was of an extremely low grade; that the protective mechanism of the cerebrospinal system was sufficient to produce an immunity against the invading organism, or that the meningeal involvement was not very extensive.

SUMMARY

The cerebrospinal fluid is a reliable index of some of the intracranial complications of otorhinogenic origin, such as meningitis, brain abscess, and subdural and extradural abscess in the vast majority of cases. It is of value not alone as an adjunct in the diagnosis of these cases but also in the prognosis and treatment. In order that the cerebrospinal fluid examination may be an accurate index of the intracranial pathologic changes present, the examinations should be performed in a scientific manner as regards the cytologic, chemical, serologic and bacteriologic determinations, and should be repeated as often as necessary. The information gained from an examination of the cerebrospinal fluid may be pathognomonic in some cases; in others it may be misleading and should not be relied on to the exclusion of other dependable clinical signs indicative of intracranial involvement. The knowledge obtained from examination of the cerebrospinal fluid may be of value either in a positive or a negative manner. A negative finding at once differentiates a meningismus from a meningitis and it usually eliminates meningitis, brain abscess, subdural and extradural abscess. One negative finding of the cerebrospinal fluid in a case of threatened or manifest intracranial complication should not be considered final.

A sterile cerebrospinal fluid with a low cell count (from 25 to 250) excludes a suppurative meningitis, but throws suspicion on the presence of an extradural or brain abscess; in a medium cell count (from 250 to 2,500), one should suspect a subdural or brain abscess or meningitis; but, in the high (over 5,000) and very high (over 10,000) cell count a diffuse suppurative meningitis is usually present. The higher the cell count, the more certain the diagnosis of diffuse septic himself stated in his original paper that "they may perhaps depend on disease of the finest blood vessels." It appears to me that until further pathologic studies discover the relation of the vascular changes to the retinal lesions, and especially the order of vessels affected, we shall not be able to advance safely beyond Hirschberg's dictum in 1890.

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[6] Yerger, C. F.: Meningitis of Otitic Origin, J. A. M. A. **79**: 1924 (Dec.) 1922.

[7] White, L. E.: Papilledema in Oto-Laryngology, Arch. Ophth. **54**: 142 (March) 1925.

[8] Mygind, Holger: Ztschr. f. Nervenh. **40**: 1910.

[9] Eagleton, W. P.: Operative Treatment of Suppurative Meningitis, Atlantic M. J. **26**: 575 (June) 1923.

[10] Singer, H. A.: Spinal Fluid Changes in Inflammation of the Brain and Meninges of Oto-Rhinologic Origin, Tr. Chicago Oto-Laryngol. Soc., 1923.

The last group of cases is that in which hemorrhages without retinitis were found in cases of diabetes in Series A without evidence of nephritis, and in Series B, with nephritis. In six patients of Group A, aged from 47 to 69, the hemorrhages were small, but in one there was retinitis proliferans. Amblyopia with central scotoma was present in two (one used tobacco freely); one developed cataract, one hemianopia, and one iritis. Series B, three cases, presented small hemorrhages in two and extensive hemorrhages in one.

Extensive hemorrhages, it is seen, were found in but one case, in a patient, aged 66, presenting marked evidences of nephritis. My experience, therefore, as stated above, is very different from that of those who find that diabetes tends to massive intra-ocular hemorrhages.

One case deserves detailed description because of its unusual character.

TABLE 2.—*(Group 1) Diabetes Without Nephritis*

	Patient	Age	Condition	Vision	Comment
1.	Mrs. M. G.	34	Retinitis punctata centralis; small patch near macula made up of minute and conglomerate white spots; no hemorrhages	6/6 alm.	Patient under insulin treatment; had marked paresis of accommodation six weeks before retinitis was discovered; cardiovascular examination negative; urine: occasional albumin, never casts
2.	Mr. M. R.	41	Retinitis punctata centralis; retinal hemorrhages; newly formed vessels convoluted in masses on disks	....	Blood pressure, 140/80; Sugar, 3 per cent.
3.	Mr. J. Y.	48	Retinitis punctata centralis; no note as to hemorrhages	20/200	Diabetes for four years
4.	Mr. J. B. F.	48	Retinitis punctata centralis; fine hemorrhages in both eyes	Perfect	Diabetes
5.	Mr. G. S.	50	Retinitis punctata centralis	20/12 20/48	Diabetes
6.	Mr. M. L.	54	Retinitis punctata centralis; small hemorrhages; very white spots and lines; a few diffuse spots	6/12	Diabetes; cataract; no casts; died 3½ years later
7.	Mrs. A.	54	Retinitis punctata centralis; mild with fine hemorrhages; retinal arteriosclerosis	20/15	Blood pressure, 180; diabetes
8.	Mr. J. M.	57	Retinitis punctata centralis; mild form; fine hemorrhages	Perfect	High blood pressure; diabetes
9.	Mrs. R.	58	Retinitis punctata centralis; punctate hemorrhages	20/76	Diabetes; died about 3 years later
10.	Mr. E. G. C.	58	Retinitis punctata centralis; fine hemorrhages; only a few in left eye	20/48 20/38	Blood pressure, 148/100; blood sugar, 0.240
11.	Mrs. J.	58	In center, conglomerate white spots; one large patch; blood vessels appear normal; punctate hemorrhage	22/100	Sugar 4 per cent.; high blood pressure
12.	Mr. B.	about 60	Retinitis punctata centralis; fine hemorrhages; later, few diffuse spots	6/60 6/24	Diabetes; toxic amblyopia; heavy smoker
13.	Mr. B.	62	Retinitis punctata centralis; no note as to hemorrhages	....	Diabetes
14.	Mrs. K.	62	Retinitis punctata centralis; typical fine hemorrhages; some also on nasal side; vessels show few abnormalities	20/20 20/70	Diabetes; diabetic gangrene; examined again 3½ years later; little change
15.	Mrs. S.	64	Retinitis punctata centralis; small hemorrhages..	6/22 6/12	Diabetes for four years
16.	Mrs. B.	64	Retinitis punctata centralis and hemorrhages; few in one eye like retinitis circinata; marked retinal arteriosclerosis	....	Diabetes
17.	Mrs. L.	65	Retinitis punctata centralis; fine hemorrhages.....	Almost perfect	Diabetes; Wassermann reaction ++
18.	Mr. D.	69	Retinitis punctata centralis; retinal arteriosclerosis	20/24 20/24	Diabetes; iritis
19.	Mr. L.	69	Retinitis punctata centralis; retinal hemorrhages; streaks not arranged in star form	Markedly defective	Diabetes for twenty-three years
20.	Mrs. D.	74	Retinitis punctata centralis; typical and fine hemorrhages; retinitis proliferans (hemorrhagic ?); marked retinal arteriosclerosis	20/200 20/30	Diabetes
21.	Mrs. H.	75	Retinitis punctata centralis; punctate hemorrhages in central retinal region	20/19 20/60	Diabetes of long standing; blood pressure, 190; later trace of albumin and occasional casts
22.	Mr. B.	78	Cataract incipient (especially left); hemorrhages in retinal lower quadrant; some hazy cottonwool spots	20/20 20/19	High blood pressure (200); sugar, 3-4 per cent.; specific gravity, 1.030
23.	Mrs. F.	80	Degenerative chorioretinitis senilis; large number of white spots confluent like diabetes, but probably senile; a few months later distinct pigment disturbance and pigment formation; recurrent hemorrhage; white spots became confluent; few fine white spots suggestive of diabetes in the right eye; fine hemorrhages and some connective tissue formation in the left eye	20/24; central scotoma	Mild diabetes

Mr. M. R. (Patient 2, Group 1), aged 41, seen, Sept. 18, 1924, had always been nearsighted. About six months before, black spots had appeared before his eyes, and they had gradually grown worse. He attributed the onset of the trouble to severe constipation, but stated that diabetes had been discovered. He had had several treatments with insulin. A blood sugar test two months before had been found normal.

The patient was wearing glasses from the prescription: R E — 0.75 = — 1.75 × 95 V 19/19; L E — 1.0 = — 1.5 × 85 V 19/15. The external examination of the eyes showed subconjunctival hemorrhages near the cornea. The ophthalmoscopic examination revealed: In the right eye a large mass of convoluted blood vessels, projecting forward from the nasal side of the excavation of the disk and for a distance of about 4 diopters. In the macular region there was one small oval hemorrhage with a diameter about the size of an artery of the first order. Further to the temporal side there were numerous punctate hemorrhages extending far out in the superior temporal region; also, some punctate hemorrhages near the inferior temporal vessels, which were very small. A few minute punctate hemorrhages were seen in the upper and lower nasal half of the retina. In the temporal region there were a large number of small, bright, white spots. The vitreous was fairly clear. There were some peripheral lenticular opacities. In the left eye, three masses of convoluted blood vessels extending from a meshwork of vessels in the disk into the vitreous. In this eye there were likewise fine punctate hemorrhages scattered throughout the retina and a number of small white spots in the temporal half of the macular region.

A physical examination was made. The blood pressure was 140 systolic and 80 diastolic. The urine contained about 3 per cent. of sugar, with a blood sugar of 0.227 per cent. The urine was otherwise negative. The kidney function phenolsulphonephthalein test showed 40 per cent. for the first hour and 25 per cent. for the second, giving a total of 65 per cent. A roentgenogram showed a disturbance of the liver and intestinal stasis. He was advised to undergo hospital treatment, but was called to his home in another state.

Table 3.—*(Group 2) Diabetes With Nephritis*

	Patient	Age	Condition	Vision	Comment
24	Mrs. F.	46	Retinitis punctata centralis; large hemorrhage from disk down; veins full and tortuous; also hemorrhage in vitreous; proliferans retinitis; marked vascular changes	6/12 6/6	Albumin, 0.08 per cent.; sugar, none; facial paralysis; three years later, diabetes with 3 per cent. sugar
25.	Mr. L.	48	Retinitis punctata centralis; left frequent retinal hemorrhages; retinitis proliferans; vitreous opacities (hemorrhagic ?)	....	Diabetes for years with constantly increasing albuminuria; died in two months
26	Mr. J. C.	50	Scattered white spots, very many; macula free; few hemorrhages	20/121 20/152	Incipient cataract; diabetes and albumin; blood pressure, 175/80; chronic nephritis
27.	Mr. M. F.	50	One whitish mass; blurred outline..................	... .	Cardiorenal disease for ten years; primary syphilitic infection; transient glycosuria; blood pressure, 150-155; B. V. show no changes; patient died ten years after condition was found
28.	Mr. H.	53	Retinitis punctata centralis; in the right eye the optic disk clear; retinal arteriosclerosis; some white spots in retina; a few fine hemorrhages; left eye, optic disk blurred; extensive changes; some whitish plaques	20/38 20/30	Diabetes; cardiac disturbance; no albumin now but has had it; sugar, which is under control; chronic glaucoma
29	Mr. B. G.	56	Retinitis punctata centralis; fine hemorrhages.....	20/60 20/30	Diabetes; blood pressure, 170/80; chronic interstitial nephritis
30	Mrs. J. L. S.	57	Retinitis punctata centralis; many small hemorrhages	Not 20/192	Retinitis discovered after cataract extraction; enlarged heart; arteriosclerosis; blood pressure, 200/120; positive albumin and sugar; occasional hyaline and granular casts
31.	Mr. L.	58	Retinitis punctata centralis; fine hemorrhages.....	20/48	Diabetes for years; lenticular opacities; sugar, 2.4 per cent., and trace of albumin and casts
32	Mr. L. F.	59	Retinitis punctata centralis; right, slight; left, marked	6/15 both eyes	Diabetes and chronic interstitial nephritis; apoplectic attack ten weeks before causing left hemiplegia
33.	Mr. M. L.	59	Retinitis punctata centralis; numerous punctate hemorrhages; marked perivasculitis	....	Diabetes mellitus; arteriosclerosis; chronic interstitial nephritis; blood pressure, 190/90; cataract extraction; slight reduction to sugar; a few hyaline casts
34.	Mrs. B.	60	Retinitis punctata centralis; fine hemorrhages.....	4/18 4/36	Diabetic gangrene and albumin; incipient cataract; later glaucoma, corneal ulceration and loss of eye
35.	Mr. A.	65	Retinitis punctata centralis; no note as to hemorrhages	....	Diabetes for five years; hemiplegia; general arteriosclerosis; chronic nephritis; albumin and a few hyaline casts; blood pressure, 160/90
36.	Mrs. G.	68	Retinitis punctata centralis; fine hemorrhages; no marked arterial changes	1/10 3/10	Diabetes, 4 per cent.; albumin; blood pressure, 180/80
37.	Mrs. P.	71	Retinitis punctata centralis; no note as to hemorrhage	20/60	Diabetes for a number of years; albumin, casts and high blood pressure
38	Miss W.	71	Retinitis punctata centralis; confluent white spots around fovea; hemorrhages	6/45	Sugar, 10 per cent., and albumin; lenticular opacities; died 1½ years later
39.	Miss H.	83	Right eye normal disk; exudates in central region like those in nephritic retinitis, especially one on temporal vessels; small hemorrhages; left eye, conglomerate white mass covering entire macula, surrounded by hemorrhages; in periphery, colloid excrescences; disk pale	....	Nephritic diabetes; high blood pressure

Table 4—*(Group 3 A) Retinitis Punctata Centralis Without Diabetes; High Blood Pressure and Arteriosclerosis; No Nephritis*

	Patient	Age	Condition	Vision	Comment
40.	Mrs. A.	47	Retinitis punctata centralis in only one eye; beginning retinal arteriosclerosis	8/8	Neither sugar nor albumin
41.	Mr. E.	52	Retinitis punctata centralis........................	6/6 6/6	Neither sugar nor albumin; observed three months; improved
42.	Mrs. L. G. . .	52	Retinitis punctata centralis; fine hemorrhages and mild neuritis; marked retinal arteriosclerosis	6/12 6/6	Marked general arteriosclerosis; no diabetes or albumin
43	Mrs. J. F. P.	56	Retinitis punctata centralis; thrombosis superior temporal vein, with hemorrhages covering an area twice the size of the disk and a number of grayish spots; a year later clusters of small intensely white spots occupied the same region lying deep in the retinal tissue; marked retinal arteriosclerosis	Marked central scotoma at first, which disappeared, leaving almost normal vision	Very high blood pressure
44	Mrs. A.	58	Retinitis punctata centralis, but not in the center; vascular changes marked	20/19 20/24	Arteriosclerosis; high blood pressure; no diabetes
45.	Mrs. C.	60	Very fine dots and lines in macula; hole in macula; no hemorrhages; later punctate hemorrhages appeared; retinal arteriosclerosis	High hyperphoria; vision good	Blood pressure, 180/110; no albumin or sugar
46.	Mrs. I.	64	Retinitis punctata centralis; small hemorrhages ..	20/15 20/60	No sugar or albumin; blood pressure, 190; arteriosclerosis; slight cardiac hypertrophy; slight dilatation of aorta; no evidence of myocardial or renal involvement
47.	Mrs. P.	65	Retinitis punctata centralis; fine hemorrhages; retinal arteriosclerosis	20/96	Blood pressure, 180
48	Mr. M. C.	?	Retinitis punctata centralis; retinal arteriosclerosis	20/200 20/200	Moderate arteriosclerosis; diastolic murmur; enlarged liver; blood pressure, 175/110; enlarged heart; no albumin or sugar
49.	Mrs. M. H.	78	Retinitis punctata centralis; flame shaped hemorrhages in both eyes	20/48 20/200; marked reduction of vision in last 6 months	Marked arteriosclerosis; high blood pressure

Two somewhat similar cases are on record. Nettleship[10] described the case of a man, aged 48, who had had diabetes for from two to three years. One eye had lost its vision from iritis and secondary glaucoma; the other was affected with retinitis, complicated by hemorrhages, and by the formation of blood vessels in the vitreous.

divide into a network of minute vessels, which projected forward in the form of fine loops into the vitreous, where the most prominent of them were seen with +6 diopters; on a few of these loops an appearance of small swellings, perhaps capillary aneurysms, could be distinctly seen.

Lawson[11] described the case of a man, aged 54, with diabetes of three and one-half years' standing, in whom over the whole of the central region, the retina was edematous and hazy, in some parts densely cloudy; near the yellow spot were some densely opaque yellowish white clumps of deposit; the retinal veins were considerably distended, and in various parts there were a few scattered blood spots. Close to the fovea centralis, two or three vessels of medium size suddenly appeared in the retina; they could not be followed to the right eye, but had every appearance of springing from the choroid directly into the retina. The largest of them (seen at its apparent emergence from the choroid with +2.5 diopters), followed upward and outward, was found to new connective tissue appeared as feathery tufts issuing from a central stalk—richly permeated with blood vessels.

These are the only cases that I have been able to find. But it must be noted that the total number of cases with newly formed blood vessels jutting into the vitreous is not large. In 1901, Marple gathered fourteen, including the two cited, to which four of Hirschberg's must be added, and few have been published since that time. It is striking that the cases cited bear a great similarity. All were in men in middle life.

Table 5.—*(Group 3 B).—Retinitis Punctata Centralis Without Diabetes; High Blood Pressure and Arteriosclerosis, With Nephritis*

Patient	Age	Condition	Vision	Comment
50. Mrs. D.	..	Retinitis punctata centralis; moderate hemorrhages	6/45	Traces of albumin; no diabetes
51. Mrs. O.	..	Retinitis punctata centralis and albuminuria; mild neuritis; tortuous veins; a few white spots on macular side of disk; one small hemorrhage; arteriosclerotic changes; in other eye, macular region studden with white spots, some in lines; few punctate hemorrhages; nasal side of retina covered with fine points	....	High blood pressure (over 235); small amount of albumin; no sugar; this condition is evidently of the same type as Moore's picture
52. Mr. W.	15	Retinitis punctata centralis; small hemorrhages...	20/24 20/19	Blood pressure, 200/100; hyaline and granular casts; no albumin or sugar
53. Mrs. R.	60	Retinitis punctata centralis in lines; radial lines in macula and one cotton wool exudate	20/20 20/70	Chronic nephritis; hypertension; no sugar
54. Mrs. B. B.	61	Retinitis punctata centralis; punctate hemorrhages; retinal arteriosclerosis	....	Arteriosclerosis; hypertension; nephropathy (trace of albumin); obesity; no sugar
55. Dr. F.	65	Retinitis punctata centralis; numerous hemorrhages and white spots scattered through retina; thrombosis of retinal vein; retinal arteriosclerosis	20/100	Chronic nephritis; arteriosclerosis; albumin and casts; no sugar
56. Mr. G. B. F.	65	*Retinitis punctata centralis*; right eye, *optic disk* blurred; veins irregular and tortuous; some little whitish spots in center; left eye much the same; white spots in macular region, more pronounced; media clear; disks show 2 diopters of swelling; some white spots on nasal side of disk; few small hemorrhages; fine arteries show high grade of sclerosis	16/30 16/30	Marked nervous symptoms; urine shows no albumin or sugar; blood pressure, 235/40; *chronic* interstitial nephritis
57. Mr. J. O.	67	*Retinitis* punctata centralis; disks blurred; optic nerve atrophy; transient paralysis of external rectus	....	Blood pressure, 198/160; interstitial nephritis; trace of albumin; specific gravity, 1.014
58. Miss K.	71	Retinitis punctata centralis; fine hemorrhages.....	20/48 20/24	Blood pressure, 220/240; slight trace of albumin; diagnosis, chronic contracted kidney

Table 6.—*(Group 4 A) Retinal and Vitreous Hemorrhages in Diabetes Without Nephritis*

Patient	Age	Condition	Vision	Comment
59. Mrs. A. S.	47	Thrombosis of superior temporal branch of retinal vein of left eye	....	Diabetes; Wassermann reaction ++++
60. Mrs. P.	49	Retinitis proliferans; marked vascular disease....	Less than 22/100	
61. Mrs. L. S.	60	Fine retinal hemorrhages and vitreous opacities; marked retinal arteriosclerosis	....	Tobacco amblyopia; cataract extraction
62. Mr. M. S.	65	Punctate hemorrhages in retina....................	Partial homonymous hemianopia	
63. Mrs. W.	66	Diabetic amblyopia 1¼ years later; retinal hemorrhages in both eyes	....	Died suddently two years later
64. Mrs. G.	69	Two retinal hemorrhages; very fine................	8/18 8/30	Incipient cataract; old iritis; fresh iritis

Table 7.—*(Group 4 B) Retinal and Vitreous Hemorrhages in Diabetes With Nephritis*

Patient	Age	Condition	Vision	Comment
65. Mrs. B.	(about 55)	Fine hemorrhagic spots...........................	6/12 6/36	Diabetes for twelve years; also albumin
66. Mrs. A. B.	..	Retinal hemorrhage in both eyes....................	....	Diabetes and chronic nephritis; chronic myocarditis; died a few months later
67. Mrs. E.	66	Extensive hemorrhages in both retinas; one large, extending into vitreous	6/30	Sugar, 3.5 per cent.; albumin, 0.1 per cent.

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[10] Nettleship: Tr. Ophth. Soc. U. K. **8**: 159, 1888.

[11] Lawson: Tr. Ophth. Soc. U. K. **19**: 288, 1899.

CONCLUSIONS

1. Diabetic patients developing retinitis generally present the punctate form which is most marked in the region between the superior and inferior temporal vessels, but may extend to other parts of the retina. The spots are usually small, but may coalesce into lines or even large masses. They are usually accompanied by fine hemorrhages. The optic disks are of clear outline; there are no signs of retinal edema, and ill defined "cotton wool" spots are rarely found. Other conditions —thrombosis of the retinal vein, retinitis proliferans and profuse hemorrhages—are of rare occurrence.

2. Retinitis punctata centralis was found in thirty-three cases with diabetes, and in eighteen without diabetes, of which latter, nine showed evidences of nephritis. At most, only nine cases could therefore be certainly classified as arteriosclerotic retinitis. The view of Foster Moore that this form of retinitis is primarily due to arteriosclerosis would lead us to expect to find it frequently, much more frequently without diabetes than with it, because of the vastly greater number of arteriosclerotic patients who are free from diabetes than those who suffer from it. But as seen in the foregoing series, quite the opposite is the case, diabetes being found almost twice as often as absent. Nor does this take account of the fact that the cases classed as "non-diabetic" were not examined as to blood sugar, and in many of the cases a single examination had to suffice. Hirschberg and others have found retinitis punctata centralis in cases in which no sugar was found at the first examination, and it required repeated examinations to discover it. Again, this does not take into account the well known fact that in old cases of diabetes, traces of sugar may be lost after nephritis has become established.

The view is justified, therefore, that retinitis punctata centralis, while not pathognomonic of diabetes, is indicative of this etiologic basis. When found in the presence of diabetes, or even of diabetes with nephritis, it may with propriety be designated as diabetic retinitis.

3. Others have stressed the appearance of profuse retinal hemorrhages in diabetes. The foregoing cases do not bear this out. The retinal hemorrhages found are generally punctate. Abundant hemorrhages are rare.

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ABSTRACT OF DISCUSSION

DR. T. B. HOLLOWAY, Philadelphia: This subject is one of increasing interest, and much investigation may still be carried on before we can arrive at a thoroughly satisfactory conclusion. As to the type of fundus changes noted in diabetes, do these occur singly or in groups in such a way as to warrant the diagnosis of diabetes? I believe that most of us who have been associated with large general hospitals have seen the types described by Hirschberg, with the possible exception of the questionable cases with pigmentation and contraction of the fields.

As to thrombosis of the retinal vein, I have never seen a case that I would attribute to diabetes, and I can recall but one case of proliferative retinitis and this was associated with nephritis. I have never seen a massive hemorrhage into the vitreous in one of these cases, so, naturally, I am in accord with the author that these conditions are rare.

The author has referred to various contributions concerning the possibilities of the so-called diabetic picture being dependent on the arteriosclerotic changes so frequently present in those individuals who manifest retinal changes. In this country the contribution of Wagener and Wilder has been especially noteworthy in this respect. It may be recalled that they attributed the retinitis to cardiovascular-renal disease, modified possibly by the metabolic disturbances, but that these played, at most, a secondary rôle.

I am in accord with the author that central punctate retinitis is seen more frequently in diabetes than in arterioscleroris. Still further, most of the marked instances of this type that I have seen have been in the diabetic rather than in simple arteriosclerotic cases.

The types and the causes of the hemorrhages present in these cases are also interesting, but time permits reference only to the view of Foster Moore that they are not dependent on increased blood pressure in the retinal arteries, but to impaired nutrition in the vessel walls, to which may be added, probably in diabetes as well as in the anemias, changes in the blood itself.

Concerning the stellate figure, I question whether it occurs in diabetes without frank nephritic changes. Atypical circinate patches I have seen in several cases, but not as often as in cases of arteriosclerosis with excessive macular changes and without diabetes. Of couse, I understand the author to mean that it is not any one of these factors he has cited that points to what we might regard as a diabetic picture, but the grouping or association of the various signs he has enumerated. The importance of blood sugar findings is now thoroughly appreciated.

DR. G. E. DE SCHWEINITZ, Philadelphia: So-called central punctate diabetic retinitis is the form of retinal disease most suggestive of diabetes; but, even so, the question is still open whether this manifestation is due solely to the diabetes or to an association of retinal angiosclerosis and diabetes, and except that the term is too cumbersome, "retinitis" or "retinal disease associated with diabetes" is more accurately descriptive of the conditions usually found. These, in my experience, in addition to the so-called central punctate diabetic retinitis, include the exudative form of retinitis characterized by widespread areas of yellowish-white exudation, probably due to the coalescence of small white spots, the lesions often arranged in zonelike areas above and below the macula, or else massed in the central retinal area. Smaller white exudations are scattered elsewhere in the retina, and hemorrhages are not infrequent; retinal angiosclerosis is conspicuous. I have seen several cases of this character as a late manifestation of diabetes; they might be associated with gangrene, carbuncle, hemiplegia and other serious complications of this disorder. I have also observed a number of cases of diabetes in which hemorrhages in the retina were extensively produced, in several instances followed by proliferating retinitis. Thrombosis of the central vein of the retina may occur, not, of course, alone as a diabetic lesion, but as a condition induced by vascular disease in a diabetic patient. Indeed, as had been stated, these hemorrhagic manifestations might be regarded as conditions for which the diabetes was a predisposing but not a direct cause. I have twice seen in diabetic patients central punctate hemorrhagic retinitis in one eye, and thrombosis of the central retinal vein in the other.

DR. H. S. GRADLE, Chicago: Ever since the first description of retinitis in a diabetic patient by E. Jager, in 1855, various forms of the condition have been described, but the majority of writers accept the classification given by Hirschberg in 1887. In 1869, H. D. Noyes described the first case of retinitis in a diabetic patient without nephritic complication. Since then well over a hundred cases have made their appearance in the literature. All this again brings up the question, Is there such a clinical entity as diabetic retinitis, or is the retinitis that is found so frequently in diabetic patients merely the result of nephritis or cardiovascular disease? So far there has not been presented any positive evidence that will allow of a definite decision. If retinitis is present in a diabetic patient in whose urine there is albumin, it is impossible to determine from the clinical picture presented by the retina whether the retinal lesion is due to the diabetes or the nephritis. But if retinitis is present in a diabetic patient in whose urine there is no albumin, can it be said that the retinitis is due to the diabetes and can the presence of a mild nephritis with the absence of albumin discernible by the usual gross tests be ruled out? I do not think so. In none of the hundred or more cases of retinitis in diabetic patients without albumin in the urine have there been made the phenolsulphonephthalein tests for kidney insufficiency, the accurate determination of the blood chemistry, capillary microscopy, or elimination of vascular hypertension. Moschowitz has shown that evidence of kidney involvement may precede actual nephritis, and such evidence may be manifest by retinal changes and alteration in blood chemistry. Are there any cases of diabetic retinitis without albumin in the urine that have not eventually developed nephritis? For the last year or more, we have been studying every case of diabetes that has come into the Cook County Hospital. A hasty compilation of the data obtained so far shows that 24.8 per cent. of all these cases show some retinal lesions more severe than a mere retinal hyperemia. Nine of the cases of retinitis proved to be of the type described by Hirschberg as Class 1, characteristic of diabetes, or the so-called retinitis centralis punctata diabetica. Five of the nine patients had albumin in the urine, as shown by the routine clinical urinalysis.

It is true that there are clinical and statistical arguments in favor of the existence of a diabetic retinitis. On the other hand, the existence of a nephritis in diabetic patients with a retinitis has never been disproved, and until such an exhaustive examination has been undertaken in a fairly large number of cases, the question must be regarded as still open.

Dr. W. H. Wilder, Chicago: I must confess that the number of cases of retinitis occurring in diabetes that I have seen is comparatively meager; but, so far as my observation goes, it seems to me that there is no such thing as a clinical picture of diabetes of the retina. We can probably attribute the findings to a more or less accidental distribution of the hemorrhages and the patches of exudate, depending on the vessels that happen to be involved and the degree of their involvement. My own experience seems to be in accord with the observations of the men in the Mayo Clinic who have had the opportunity of studying the retinal changes in large numbers of cases of diabetes and who found in many of them sclerotic vessel changes not unlike those seen in so-called nephritic retinitis. The picture in the eyeground will depend on the degree and extent of the arteriosclerotic change in the retina. One eye only may be affected, or the vessels of one part of the retina may be atheromatous, and others may not be affected to a degree sufficient to allow hemorrhages or cause exudates. Of course, if the vascular changes are very extensive we may get the familiar picture that is so classic of albuminuric retinitis. Naturally, we should expect to get all sorts of gradations according to the degree of involvement of the vessels. Whether or not there is anything in diabetes to cause a peculiar distribution of the hemorrhages or exudates in the retina is the question at issue, but it would seem more reasonable to explain them on the ground of vascular changes which we know from observation are more or less irregular and haphazard in their distribution.

Dr. E. E. Holt, Portland, Maine: One of the earliest signs of diabetes is the development of heterophoria of such a nature as to produce diplopia at times. In same of the cases I have referred the patient back to the family physician to search for the several causes of such disturbances and he would report back that he could find none. Later on diabetes developed, so that diabetes comes into my mind when the muscular disturbances develop suddenly.

Dr. Harry Friedenwald, Baltimore: I wish to call the attention of Dr. Wilder to the fact that I emphasized in the paper the importance of the arteriosclerotic changes and that Wagener and Wilder did not study 300 cases of diabetic retinitis, but 300 cases of diabetes, many of which were complicated with nephritis. In that series they found only about twenty-five cases with retinitis, including what they described as albuminuric retinitis, and also cases of hemorrhagic retinitis. The importance of the underlying arteriosclerosis I believe is not disputed by any one, but I do not believe that that alone explains the situation such as I have described—that in the course of years looking for these cases, I have found this condition almost twice as often in cases of diabetes than in cases in which no diabetes was discovered.

THE PRECIPITIN REACTION OF FIBRINOGEN *

LUDVIG HEKTOEN, M.D.
AND
WILLIAM H. WELKER, Ph.D.
CHICAGO

The various fibrinogens used in our experiments were prepared [1] as follows:

Four parts of the clear plasma obtained by centrifugalization of oxalated blood are mixed with one part of saturated solution of ammonium sulphate; the precipitate is removed by centrifugalization or by straining through washed cheesecloth, depending on its state of division, and then washed with one or two changes of 20 per cent. saturated ammonium sulphate solution, and finally dissolved in a 2 per cent. solution of pure sodium chlorid, which solution is then filtered. A second precipitation is made by adding one part of saturated ammonium sulphate solution to five parts of the 2 per cent. sodium chlorid solution; the precipitate is again separated as indicated, washed, and redissolved in 2 per cent. sodium chlorid solution. At least four precipitations are made in this way in all cases. If there is any indication of a positive benzidin test in the last solution, further precipitations are made until the solution no longer reacts with benzidin.

Precipitin Reaction of Diverse Fibrinogens

Fibrinogens	Antifibrinogen Precipitin Serums							Normal Rabbit Serum
	Beef	Chicken	Dog	Horse	Human	Sheep	Swine	
Beef......	150,000	0	400	50,000+	3,000+	3,000+	3,000+	0
Chicken...	0	20,000	0	0	0	0	0	0
Dog.......	80,000	0	40,000	1,000	+	0	0	0
Horse.....	40,000	0	1,000	70,000+	0	1,000	2,000+	0
Human...	60,000	0	500	500	16,000	1,600	6,000	0
Sheep.....	30,000	0	0	500	0	24,000	6,000	0
Swine.....	50,000	0	0	16,000	0	8,000	60,000	0

The figures give the highest dilutions of the fibrinogen solutions that showed precipitate at plane of contact with undiluted antiserum after one hour at room temperature. The dilutions were made with 0.9 per cent. salt solution.

Rabbits were immunized by intravenous injections at intervals of three days with increasing quantities of solutions of fibrinogen which varied in strength from 1 : 50 up to 1 : 3,000. In most instances, the quantities were 2, 4, 6, 8, 8 and 10 c.c. As a rule, the serum was found to be fairly rich in precipitin on the fourth day after the fifth or sixth injection; in a few cases, additional injections were given in the hope of increasing the precipitin content of the serum. The beef, dog, human and horse fibrinogens as a rule did not give reaction for the corresponding hemoglobin or blood proteins in tests of the solutions with precipitin serums; in the case of chicken, sheep and swine fibrinogens, such tests were not made.

The results of the precipitin tests by the layer or contact method, read after one hour at room temperature, show that the precipitin serums for fibrinogen may have considerable potency, as shown in the accompanying table. The figures indicate approximately the highest dilutions in 0.9 per cent. salt solution of the fibrinogen solutions in which definite reactions developed after contact for one hour with undiluted antiserums. In most cases the antiserums did not contain precipitin for the corresponding blood serum or serum proteins except possibly in traces; in one serum against beef fibrinogen and in one against swine fibrinogen, the specific serum precipitins in each reached a titer of 1:1,000; the serum against chicken fibrinogen reacted with chicken serum, 1:8,000. The table also shows that the fibrinogen precipitins are not species-specific in the strict sense, as in every instance except the antiserum for chicken fibrinogen there was action on heterologous fibrinogens. So far, no interaction has been noted between antiserum for mammalian fibrinogen and chicken fibrinogen or vice versa, but further observations are necessary before any definite conclusion can be drawn.

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* From the Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., and the Laboratory of Physiological Chemistry, College of Medicine, University of Illinois.

[1] Howell, W. H.: Harvey Lectures, 1916-1917, p. 273. McLean, J.: Bull. Johns Hopkins Hosp. 31:453 (Dec.) 1920.

The different quantitative relations of the mammalian fibrinogens to the various antiserums indicate clearly that there are differences as well as similarities in these fibrinogens. This is shown also by the results of preliminary absorption tests. Experiments with antiserum for swine fibrinogen, in which the serum was mixed in each case with an equal part of a solution of fibrinogen from 1:200 to 1:800 in strength, and the resulting precipitate removed by centrifugalization, resulted in the removal of the corresponding precipitin, leaving the precipitin for swine fibrinogen in nearly its original strength or more or less reduced. It was found further that absorption with beef fibrinogen would remove the precipitin for beef and also for human fibrinogen and vice versa, and that absorption with sheep fibrinogen removed the precipitin for sheep and also for beef and human fibrinogens. Further experiments of this kind must be made, however, in order to reach conclusive results.

When fibrinogen solutions and precipitin serums for fibrinogen stand in the icebox for weeks, their precipitin reactions tend to become more narrowly species-specific; in other words, certain precipitinogens and precipitins appear to be lost after a time.

While antifibrinogen serum may not react with normal serum (except perhaps with the homologous as in the case of beef, swine and chicken fibrinogen precipitins), the results with mammalian plasma in fully controlled tests are quite the opposite. Citrated plasma has been used, prepared by mixing one part of blood with two parts of 2 per cent. sodium citrate solution in 0.9 per cent. salt solution. Besides the plasma from the mammals already enumerated (except beef), goat, guinea-pig, rabbit and rat plasma has been tested with the antifibrinogen serums used in this work. In most instances prompt reactions took place; dog, horse, human and swine plasma responding best with all the antiserums. Rabbit plasma, when fresh, appeared to react slightly with all the antifibrinogens, except chicken, but the results proved difficult to read on account of clotting. Guinea-pig and rat plasma did not react with human or swine antifibrinogen. The chicken antifibrinogen serum gave doubtful traces of reaction only with human and swine plasma. The results of the precipitin tests with plasma confirm and extend the observations that there are closely related or identical antigenic elements or properties in mammalian fibrinogens; it also is shown by these results that fibrinogen, as it exists in the plasma, has the antigenic properties of the purified substance.

In addition to the reaction of rabbit plasma with antifibrinogen, purified rabbit fibrinogen also may react with the serum of rabbits immunized with alien fibrinogen. This raises the question whether the rabbit can produce precipitin on injection of its own fibrinogen. As it can produce precipitin in response to rabbit lens protein [2] and rabbit thyroglobulin,[3] it seems reasonable to expect that it will respond to rabbit fibrinogen also.

Bauer and Engel [4] studied the immune reactions of beef and swine fibrinogens prepared by Heubner's modification of Hammarsten's method. They report that complement fixation showed individual and species-specificness and that the precipitin test gave similar results with some overlapping. Further review of the literature, including Davide's [5] recent work on the action of antifibrinogen serum on red corpuscles, is reserved for a later report.

SUMMARY

The fibrinogens of beef, chicken, dog, horse, human, sheep and swine blood are precipitinogenic. The enumerated mammalian fibrinogens, to which may be added those of the goat, guinea-pig, rabbit and rat, have antigenic elements or properties that are more or less common to all of them. Consequently, fibrinogen is not necessarily wholly different for each species, as seems to be the case with serum proteins and hemoglobin, but to varying extent the same in different species, resembling in this respect casein, lens proteins, and to some extent thyroglobulin, and the principle of strict species-specificness does not hold in the precipitin reaction of mammalian fibrinogen. The specificness of chicken fibrinogen invites further study.

637 South Wood Street.

Clinical Notes, Suggestions, and New Instruments

EXTREME LEUKOPENIA IN LOBAR PNEUMONIA *

William C. Menninger, M.D., Topeka, Kan.

A. S., a man, aged 34, whose past general health has been good, was a liberal consumer of alcoholic beverages. Five days before admission to the hospital, following an alcoholic spree, he developed a chill, pain in the right chest, fever, and a cough productive of "black or brown" phlegm. These symptoms continued, and the bowels did not move in the four days prior to admission.

The patient was markedly dyspneic and acutely ill, with cyanotic face and extremities. The lips were dry, the tongue was coated, and the pharynx was congested. Over the right lower lobe, there were typical signs of consolidation. The size of the heart was normal, but the rhythm was irregular as a result of numerous extrasystoles. The abdomen was soft, and the liver and spleen were not felt.

During the twenty-two hours in which the patient was observed, the temperature ranged between 104 and 105 F. and the pulse rate between 120 and 130 beats per minute. The respirations were 52 per minute on admission and fell to 40 just before death. The patient became irrational about six hours after admission, and comatose twelve hours later. He developed a rigid neck, rigid abdomen, tache cerebral and questionable Kernig's sign, but the knee and ankle jerks remained normal. The spinal fluid was clear, sterile and under normal pressure. A blood culture taken a few hours before death showed about 400 colonies of pneumococci per cubic centimeter of blood.

The five leukocyte counts that I made are shown on the accompanying table. In order to eliminate a technical error, the diluting solution (0.5 per cent. acetic acid) was checked by performing counts on other persons. The smears stained by Wright's method showed a great scarcity of white cells, the large majority of those found being lymphocytes with no abnormal red or white cells. The patient died twenty-two hours after admission. Permission for a necropsy could not be obtained. Confirmation of this blood picture was made by Drs. Maurice Richter, A. L. Wincor and H. G. Holder.

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[2] Hektoen, Ludvig; and Schulhof, Kamil: J. Infec. Dis. **34**:433 (May) 1924.

[3] Unpublished observation.

[4] Bauer and Engel: Biochem. Ztschr. **42**:399, 1912.

[5] Davide, Hans: Acta Medica Scandinavica, Suppl. 13, 1925.

* From the Second (Cornell) Medical Division, Bellevue Hospital, New York.

Leukocyte Counts

Hours After Admission	Leukocytes Per C.Mm.	Differential	Erythrocytes	Hemoglobin
8	150	95% lymphocytes 5% polymorphonuclears	....	....
8¼	350		....	....
9	200	....	....	....
16	200	Same	5,792,000	95%
20	275	....	....	....

COMMENT

Naegeli,[1] in a review of the literature on the subject, states that a relative leukopenia (under 10,000 cells) occurs in from 5 to 10 per cent. of the cases of lobar pneumonia, and that such cases always present a bad prognosis. He calls attention not only to patients in whom there is no leukocytosis, but to less common instances of actual leukopenia. Samuels and Lambert,[2] who also review the literature, suggest that one of the explanations for persistently low leukocyte counts in acute lobar pneumonia lies in the previous injury to the bone marrow by chronic alcoholism. The lowest count in 582 lobar pneumonia patients studied by Chatard[3] was 2,500. The present case shows the most extreme degree of leukopenia that could be found in the recent literature.

There was nothing except the leukopenia in this case to suggest that the patient was suffering from an acute stage of leukemia, associated with the pneumonia.

DEODORIZATION OF PATHOLOGIC SPECIMENS PRESERVED IN SOLUTION OF FORMALDEHYD *

JAMES C. WHITE, M.D., BOSTON

The formaldehyd gas that arises from pathologic specimens that have been preserved in solution of formaldehyd is irritating to the average person's eyes, nose and hands. A method for neutralizing the disagreeable fumes is here reported.

The agent is ammonia, which combines readily with formaldehyd to form the nonirritating compound hexamethylenamin.

$$4\ NH_3 + 6\ CH_2O = (CH_2)_6\ N_4 + 6\ H_2O.$$

The procedure is as follows: The formaldehyd preserved material is first rinsed in water, followed by a brief dip in a solution of very dilute ammonium hydroxid. The latter is made up by adding from 5 to 10 c.c. of strong ammonia water (28 per cent. NH_3 with a specific gravity of 0.9) to the liter of tap water. The mixture smells very faintly of ammonia, but it will completely deodorize formaldehyd saturated tissues, which ordinarily are very disagreeable to handle. I first tried out this method while cutting sections of brains hardened in solution of formaldehyd. Microscopic slides cut from these specimens show no crystalline deposits of hexamethylenamin nor any defects in taking the ordinary stains, and the deodorized tissues can be subsequently returned to the formaldehyd solution for further preservation.

This method was first tested under the supervision of Dr. W. G. MacCallum in the pathologic department of the Johns Hopkins Hospital and is now being employed by Dr. H. F. Hartwell at the Massachusetts General Hospital for the deodorization of pathologic specimens in the course on surgical pathology.

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[1] Naegeli, O.: Blutkrankheiten und Blutdiagnostik, Ed. 4, Berlin, Julius Springer, 1923, p. 489.

[2] Samuels, S. S., and Lambert, R. A.: Relationship of the Leukocyte Count and Bone Marrow Changes in Acute Lobar Pneumonia, J. Infect. Dis. **23**: 443-448 (Nov.) 1918.

[3] Chatard, J. A.: The Leukocytes in Acute Lobar Pneumonia, Johns Hopkins Hosp. Rep. **15**: 89-98, 1910.

* From the West Surgical Service of the Massachusetts General Hospital.

A CASE OF "HEMORRHAGIC ENCEPHALITIS" TREATED WITH SODIUM THIOSULPHATE *

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Instructor in Medicine, Medical College of Virginia

McBride[1] recently reported a case of hemorrhagic encephalitis treated with sodium thiosulphate. In this report the author states that "nowhere has been noted the use of sodium thiosulphate in the condition spoken of as "hemorrhagic encephalitis." Another case of the same condition treated with sodium thiosulphate, with unfortunately not the result that was noted in McBride's case, is here reported. In this case, as in McBride's, the "encephalitis" followed sulpharsphenamin injection.

REPORT OF CASE

J. A., a white man, aged 33, was brought, March 17, 1925, to the hospital division in a semiconscious state. The history was obtained from the patient's private physician, who stated that he had treated the patient prophylactically for syphilis. The physician stated that he had treated the patient's wife for syphilis prior to her marriage, that she had had a miscarriage four months before her marriage, and that her blood Wassermann reaction was strongly positive. He advised her husband to come to him for examination on learning from her of her marriage. The husband came for examination, and it was found that his physical condition was excellent, and that his blood Wassermann reaction was negative; but because of the history and condition of his wife, the physician advised some antisyphilitic treatment for him. The physician stated that he then gave the husband 0.4 gm. of sulpharsphenamin intravenously. There was no reaction, and the patient returned one week later for a second dose. This time he was given 0.5 gm. of sulpharsphenamin intravenously. There was no immediate reaction. The next day the patient complained of general aching and headache. His temperature was 99 F., and pulse rate 90 a minute at the time of the physician's call. The next day the patient told the physician that he felt about the same, and the day following this he stated that he felt somewhat better; that evening, however, the patient refused his supper, took to bed, and about one hour after this had a convulsion. He was then sent by ambulance to the hospital.

On admission, the patient was semi-conscious and in a profuse sweat. The skin almost everywhere showed great numbers of bluish spots varying in size from a pinhead to several centimeters; these appeared to be real hemorrhages. Examination was very difficult because of the extreme restlessness of the patient; it was thought, however, that the lungs and the heart sounds were normal. There was good motion of the arms and legs. Further examination was impossible.

The patient was given ¼ grain of morphin by the intern, and though very restless at times, had no convulsions during the night and stayed in bed. The next morning the patient was extremely restless and very difficult to control, at times talking at random. The subcutaneous hemorrhages had increased in number, the skin now having bluish spots in every area; in addition, a subconjunctival hemorrhage in the right lower eyelid was noted. At 10:30 a. m., March 18, 10 c.c. (1 gm.) of sodium thiosulphate was injected intravenously. One hour later the patient had a severe, generalized convulsion lasting about one minute, following which the patient was deeply unconscious. At 1:30 p. m. there was another convulsion; following this convulsion another gram of sodium thiosulphate was injected. Ophthalmoscopic examination at this time showed the disk margins to be well outlined and the blood vessels normal. No hemorrhages or exudate were seen. A spinal puncture was done at 2 p. m. The fluid appeared clear and colorless and the pressure read at 22 mm. of spinal fluid. The pressure was reduced to 10 mm. and the needle withdrawn.

The laboratory findings, March 18, were: hemoglobin, 90 per cent.; red blood cells, 4,500,000 per cubic millimeter; white blood cells, 16,400; differential count: neutrophils, 89 per cent.; small and large lymphocytes, 11 per cent. Blood smears appeared normal. The blood coagulation time was five minutes. The blood Wassermann reaction was negative. Examination of the spinal fluid revealed hundreds of red blood cells per low power field. The cells appeared round with central acromia. There were very few crenated cells. The guiaic test for blood was markedly positive. The Wassermann reaction was negative. A catheterized specimen of urine showed some albumin (trace), no casts, an occasional epithelial cell and hundreds of red blood cells per low power field. The guiaic test was markedly positive.

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* From the Department of Internal Medicine, Medical College of Virginia, Hospital Division.

[1] McBride, R. H.: Treatment of Arsphenamin "Encephalitis" with Sodium Thiosulphate, J. A. M. A. *84: 729 (March 7) 1925.*

At 4:30 the patient was seen again and appeared to be much worse. He had had eight convulsions during the afternoon and was now in deep coma. He was given another gram of sodium thiosulphate intravenously. The only other therapy given was 15 grains of chloral hydrate by rectum at 2:45 p. m. and 500 c.c. of physiologic sodium chlorid solution at 2 p. m. and again at 4:20 p. m. At 4:30 p. m. the last convulsion occurred and at 5:30 p. m. the patient died. Permission for necropsy was not obtained.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PITUITARY EXTRACT OBSTETRICAL-MERRELL.—A slightly acid aqueous solution containing the water-soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, preserved with 0.5 per cent. of chlorbutanol. It is standardized so that 1 Cc has an activity on the isolated uterus of the virgin guinea-pig corresponding to not less than 80 per cent. and not more than 120 per cent. of that produced by 0 005 Gm. of standard, defatted, dried, powdered, posterior lobe of pituitary gland of cattle.

Actions and Uses.—See Pituitary Gland, New and Nonofficial Remedies, 1925, p. 260.

Dosage.—From 0 25 to 1 Cc. (4 to 16 minims).

Manufactured by The Wm. S. Merrell Company, Cincinnati. No U. S patent or trademark.

Ampoules Pituitary Extract Obstetrical Merrell, 0 5 Cc.
Ampoules Pituitary Extract Obstetrical Merrell, 1 Cc.

PITUITARY EXTRACT SURGICAL-MERRELL.—A slightly acid aqueous solution containing the water-soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, preserved with 0.5 per cent. of chlorbutanol. It is standardized so that 1 Cc. has an activity on the isolated uterus of the virgin guinea-pig corresponding to not less than 80 per cent. and not more than 120 per cent. of that produced by 0 01 Gm. of standard, defatted, dried, powdered, posterior lobe of pituitary gland of cattle.

Actions and Uses.—See Pituitary Gland, New and Nonofficial Remedies, 1925, p. 260.

Dosage.—From 0.25 to 0 5 Cc. (4 to 8 minims).

Manufactured by The Wm. S. Merrell Company, Cincinnati. No U. S. patent or trademark.

Ampoules Pituitary Extract Surgical Merrell, 1 Cc.

SOLARSON.—A 1 per cent. solution of ammonium heptenchlorarsonate ($CH_3(CH_2)_4CCl:CH.AsO.OH.ONH_4$), rendered isotonic by the addition of sodium chloride. Solarson contains from 0.255 to 0.275 Gm. of arsenic (As) in 100 Cc.

Actions and Uses.—In experiments on rabbits the toxicity of solarson, computed on the basis of its arsenic content, was found to be somewhat less than that of arsenic acid (H_3AsO_4) when given intravenously or subcutaneously; in dogs it was about the same. Repeated daily subcutaneous injections of an amount of solarson equivalent to 0 002 Gm. arsenic per kilogram was well tolerated by rabbits. An experiment on a dog showed that after the subcutaneous administration of a dose of solarson corresponding to 0.02 Gm. arsenic, the urine collected for twenty-four hours after the injection contained 0 0052 Gm. of arsenic and the feces in forty-eight hours 0.0012 Gm.: this is taken to show that the arsenic of solarson is readily liberated in the system and is well utilized. It is claimed that solarson has an advantage over the cacodylates, in that its arsenic is better utilized, and over the arsenilates in that subcutaneous and intramuscular injections produce less pain and are less liable to produce toxic effects.

Solarson is used as a means of obtaining arsenic effects in the treatment of anemia, chlorosis, malaria, neuroses and dermatoses.

Dosage.—From 1 to 2 Cc. subcutaneously or intramuscularly.

Manufactured by the Bayer Co., Inc., Rensselaer, N. Y. (Winthrop Chemical Co, Inc, New York, distributor). U. S. patent 1,201,692 (Aug 17, 1916; expires 1933). U. S. trademark 110,626.

Solarson Ampules, 1 2 Cc

Solarson is prepared by neutralization of heptenchlorarsonic acid with ammonium hydroxide and dilution with sufficient water to produce a 1 per cent. solution of ammonium heptenchlorarsonic acid; sufficient sodium chloride is added to render the solution isotonic.

The heptenchlorarsonic acid used in the preparation of solarson responds to the following tests· It melts at 114 to 115 C. and contains 29 21 per cent of arsenic (As).

To determine the arsenic content of solarson, treat about 1 Gm. of solarson, accurately weighed, with 5 Cc of arsenic-free nitric acid and 5 Cc of arsenic free sulphuric acid. Boil the mixture until white fumes appear; allow to cool and add 50 Cc. of water and boil for five minutes Allow the liquid to cool and make it up to 100 Cc. with distilled water Add 50 Cc. of this liquid in portions to a generating marsh apparatus. Collect the arsenic in a weighed arsenic tube 15 Cm. long, heated to redness in two places and cooled in two other places by water soaked wicks. Continue the collection of the arsenic for six hours, cool the arsenic tube and weigh it. The arsenic found in the solarson is not less than 0.255 Gm. nor more than 0.275 Gm. per hundred cubic centimeters.

BISMOSOL.—A solution of potassium sodium bismuthotartrate (containing 35 per cent. bismuth [Bi]) 10 Gm.; piperazine, 0 3 Gm., in an aqueous solution of glucose, 100 Cc.

Actions and Uses—Bismosol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (see Bismuth Compounds, New and Nonofficial Remedies, 1925, p. 73).

Dosage.—Bismosol is administered intramuscularly in doses of 1 Cc every two to seven days until twenty doses have been given. After an intermission of one month, a second course may be given.

Manufactured by Powers-Weightman-Rosengarten Co, Philadelphia, by license of Les Etablissements Poulenc Freres, Paris. No U. S. patent. U. S. trademark 196,017.

Bismosol Ampules, 1 Cc.

Bismosol is a pale yellow, syrupy liquid. On adding diluted hydrochloric acid, drop by drop, to bismosol, a gelatinous precipitate is formed which redissolves on further addition of the acid, the resulting solution yields a brownish black precipitate when saturated with hydrogen sulphide On evaporation and ignition, bismosol yields an alkaline residue which effervesces with acids

To 1 Cc. of bismosol add three drops of acetic acid, a few drops of solution of hydrogen dioxide, one drop of ferrous sulphate solution and then an excess of sodium hydroxide solution: a purple violet color is produced To 1 Cc. bismosol add diluted hydrochloric acid drop by drop, until the precipitate which is formed has redissolved, and then add a few cubic centimeters of potassium bismuth iodide solution: a brilliant red precipitate is produced.

To 5 Cc. bismosol add about 100 Cc. water and sufficient hydrochloric acid to redissolve the precipitate first formed, heat the solution to from 70 to 80 C. and saturate with hydrogen sulphide to precipitate completely the bismuth as bismuth sulphide. Collect the bismuth sulphide on a tared Gooch crucible, wash successively with water, alcohol, carbon disulphide and alcohol; dry to constant weight at 110 C The weight of bismuth sulphide is equivalent to 3.5 Gm. of bismuth (Bi) in 100 Cc. of bismosol.

CAPROKOL (See THE JOURNAL, May 2, 1925, p. 1338).

The following dosage form has been accepted:

Caprokol (Hexylresorcinol S. & D) 2½ per cent Solution in Olive Oil.

SAJODIN (See New and Nonofficial Remedies, 1925, p. 182).

The following dosage form has been accepted:

Sajodin Tablets 1 Grain.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (See THE JOURNAL, May 2, 1925, p. 1338).

Parke, Davis & Co., Detroit.

Scarlet Fever Streptococcus Antitoxin Concentrated Globulin P. D. & Co.—It is prepared from the serum of horses treated with subcutaneous injections of toxic filtrate from cultures of scarlet fever streptococci, and also with intravenous injections of the streptococci themselves. Each cubic centimeter neutralizes from 35,000 to 40,000 skin test doses of scarlet fever toxin.

Marketed in packages of one syringe containing 2½ Cc, and in packages of one syringe containing 10 Cc.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 8, 1925

THE LATEST CANCER PARASITE

The daily press has been flooded for a few weeks with discussions of length and with headlines of excitement concerning another "cancer germ." Cautious physicians, interviewed on the topic, avoided positive statements, as they need must because of the lack of adequate information concerning the real facts that had been reported by Dr. Gye and Mr. Barnard. The *Lancet* has now reached this country with the preliminary report of the new research.[1] The scientific statements are preceded by this unusual editorial introduction:

> The two communications which follow mark an event in the history of medicine. They form a detailed description of a prolonged and intensive research into the origin of malignant new growths, and they may present a solution of the central problem of cancer.

The *Lancet's* prejudgment of medical history is hardly in keeping with the modest claim that "they may present a solution," and gives the impression that some one may have become excited. Briefly, the result of the new research is this: Some fourteen years ago Peyton Rous of the Rockefeller Institute was studying a transplantable spindle cell growth which arose in a fowl, and discovered to his surprise that filtrates of these tumors, even after being made cell-free by filtration through Berkefeld filters, would regularly produce the same sorts of growths in suitable fowls. Up to that time successful transfer of tumors from one animal to another had been accomplished only by means of actual grafting of living tumor cells, which then proceeded to grow on the host which served as a culture medium, but which did not provide the tumor cells themselves. Rous also found that cells of these chicken growths, presumably killed by drying or by keeping in glycerin, would produce new growths when injected into fowls. It was subsequently learned that these observations could be repeated with other connective tissue tumors from fowls, and this has now been done several times. The work of Rous was conducted most carefully, with full controls and with the most scrupulous avoidance of making any claims not well inside the observed facts. It established beyond doubt that in fowls there occur growths, resembling in every essential respect typical sarcomas as they occur in man and in other mammals, due to some filtrable "agent" (Rous in his admirable scientific conservatism avoided calling the agent a parasite or even a "virus") which persists in dead and dried cells but which is readily destroyed by heat and various antiseptics.

Striking as this contribution is, however, it has not served to establish that cancer is caused by a specific parasite, for numerous reasons which have seemed adequate to most investigators of cancer problems. The first difficulty is that this demonstration of a filtrable virus has been accomplished only with these few sarcoma-like growths of fowls. Innumerable attempts to accomplish a similar isolation of a cancer-producing agent from the tumors of mammals have always failed, and there is no established instance of an unquestionable mammalian tumor ever having been transferred from one animal to another except by transplanting living tumor cells. The fact that chickens react to a certain agent, which may well be a specific living virus, by producing a connective tissue overgrowth similar to a sarcoma, is far from establishing that cancer is generally caused by a specific infecting agent. We know little about the pathology of fowls, but what we do know indicates a capacity to produce such connective tissue growths readily enough from other causes than injection of a living virus. Murphy and Landsteiner have produced such growths by injecting tar into fowls,[2] and although these growths resembled the "sarcomas" studied by Rous, no filtrable virus could be obtained from them. That is to say, even in fowls such growths do not necessarily depend on a specific cancer virus.

It is with these fowl tumors that Gye has been working chiefly; that is, with a condition long known to be produced by a filtrable agent resembling in behavior a living virus, and in this essential respect different from any known cancers of man or other mammals.[3] This fact must be kept clearly in mind.

Dr. Gye has confirmed many of Rous' findings, and seems to have shown that the active agent in the growth is capable of multiplication in a special medium under anaerobic conditions. He also has conducted some experiments which he interprets as indicating that the virus alone cannot produce the disease, but requires the presence of some other agent, probably a chemical substance, which is contained in the new growths. The virus is invisible by ordinary microscopic study, but by using the well known method of photography by ultraviolet rays (not a new discovery as the press accounts proclaimed), Mr. Barnard has demonstrated the presence of spheroidal forms which are believed to be the infective agent, but, as far as we can see, without any proof that this is the case. As Barnard himself says: "Unless considerable care is exercised, the spheroids may easily be confused with other spherical bodies occurring in most organic fluids." Certainly the presence of such spheroidal bodies in a culture medium is far from a demonstration that they are a specific virus causing a disease, and if the authors have controlled their findings by inoculation of mediums with tissues, normal and diseased, and not from cancer, we have failed to find mention of it.

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[1] Gye, W. E.: The Etiology of Malignant New Growths, Lancet 2: 109 (July 18) 1925. Barnard, J. E.: The Microscopical Examination of Filterable Viruses Associated with Malignant New Growths, ibid., p. 117.

[2] Recent Progress in the Experimental Production of Cancer, editorial, J. A. M. A. 84: 1918 (June 20) 1925.

[3] There is a specific infectious granulomatous disease of canines, transmitted by coitus and strongly contagious, which bears a histologic resemblance to lymphosarcoma.

Although similar ultramicroscopic spheroidal bodies were found in materials from mouse sarcoma and human carcinoma, in no case have other observers succeeded in producing true neoplasms in mammals by injection of such cell free filtrates. Gye believes that this is because the chicken tumors are peculiar in being exceptionally richly supplied with the unknown, hypothetic chemical substance that is supposed to be necessary to permit the living virus to act. He describes a few experiments in which growths have been produced in fowls by injecting an inactive filtrate from fowl tumors to which had been added human carcinoma and rat and mouse tumors. But no mammalian tumors have been produced in this way, and so the positive results really concern only a disease in fowls which characteristically differs from mammalian sarcoma and carcinoma, and even from fowl carcinoma as far as this has been studied, in being readily produced by some agent separable from the tissue cells. Certainly, this is far from the discovery of the specific germ of cancer. Gye's own conclusions are expressed in the following words:

> These researches have led me to look upon cancer—using the term in its widest sense—as a specific disease caused by a virus (or group of viruses). Under experimental conditions the virus alone is ineffective; a second specific factor, obtained from tumor extracts, ruptures the cell defenses and enables the virus to infect. Under natural conditions, continued "irritation" of tissues sets up a state under which infection can occur. The connection between the specific factor of a tumor and an irritant remains to be investigated. Some of the relatively unimportant "irritants" are known, such as coal tar, paraffin oils, etc. The virus probably lives and multiplies in the cell and provokes the cell to continued multiplication.

The critical reader of the reports in the *Lancet* obtains the impression that an intricate hypothesis has been developed on a small number of facts, and that if on reinvestigation by others new facts should be discovered, the hypothesis will collapse. In view of the weighty and abundant evidence that the production of cancer does not depend on or require a specific cancer germ, and that some forms of malignant growths can scarcely possibly be produced by infection (e. g., complex malignant teratoid neoplasms arising in the fetus in utero), it will require much more proof and repeated corroboration of these observations before it will be demonstrated that all cancer is caused by a "cancer germ," either with or without some chemical accessory agent.

THE BRITISH MEDICAL ASSOCIATION—CONGRATULATIONS!

On July 13 the British Medical Association, founded in 1832, opened its new home in London, with ceremonies fitting to the occasion, attended by the king and queen of England and by many other notables, including delegates from most of the British colonies and from the American Medical Association. At the same time, the Archbishop of Canterbury dedicated memorial gates to the grounds, erected as a tribute to 574 British physicians, members of the association, who died in the Great War.

In 1878 the British Medical Association undertook to print its own periodicals and occupied its first home. In 1886 the increase in its membership and the circulation of its journal permitted the leasing of larger offices, and as recently as 1908, following its reorganization in 1902, it moved to its third home, familiar to many Americans, at 429 The Strand. One of the chief reasons for occupying its present new home was to provide a hall for large meetings of the delegates and for smaller conferences. The present home includes, in addition to offices for the three departments, a spacious library, a general conversation room for members, a council chamber, numerous committee rooms, and a hall capable of seating 500 persons. It is surrounded by spacious grounds, including a central garden and another garden, which is a fine example of landscape architecture, centering about a pond. In securing this establishment, the British Medical Association was extremely fortunate, since it took over a structure originally begun for another purpose, taken over later by the government for war purposes and acquired by the British Medical Association through the disposals board of the War Department. The buildings were originally planned to house a religious organization, which was unable to complete the work. The building covers 18,000 square feet and has a total floor space of 50,000 square feet. It is occupied by the general offices of the association, including the publishing, subscription and advertising offices on the first floor; there are accommodations for the finance department and the staff of the medical insurance agency on its second floor, for the editorial staff on the third floor, and for the printing departments on the fourth floor. Other wings contain the committee rooms, the secretarial offices and the other halls that have been mentioned.

Much significance attaches to attendance of the king and the queen at the opening of the new home. The king, in his response to the address of the chairman of the council of the British Medical Association, heartily welcomed the guests, including particularly those from the American Medical Association. He paid tribute to "the noble purpose, the character and the skill of those engaged in the art of healing," stating that he had followed with sympathy the negotiations for securing cooperation between the medical profession and the public health services.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION extends congratulations to the British Medical Association and to the *British Medical Journal* on reaching this epoch in their continuous progress. The British association has stood always for service to scientific medicine and to the public. The spirituality of this work makes all the more significant the fact that the new home should have been built originally with religious service in view.

THE FUTURE OF CHIROPRACTIC

Chiropractic is the illegitimate offspring of magnetic healing and osteopathy. According to chiropractic legend, the magnetic healer Daniel David Palmer punched the deaf janitor Harvey Lillard in the back of the neck and thus restored his hearing. So, like Eve from the rib of Adam, chiropractic was born from the back of Harvey Lillard. It is reported that D. D. Palmer had sojourned briefly in Kirksville, Mo., where he had imbibed at the spring of knowledge there maintained by Andrew Still. Chiropractic acquired its aura of mystery from magnetic healing; from its osteopathic parentage, no doubt, it derived political astuteness and financial acumen. Thus, genetically and biologically may we account for such successes as the cult has achieved in its own peculiar field of activity.

That the chiropractor would follow in the footsteps of other cultists in the endeavor to squirm his way into unrestricted medical practice became promptly apparent. It was soon urged that chiropractors employ any diagnostic or therapeutic agent that they wished provided they did not run afoul of the law. Diet, exercise and all other physical agencies were suggested to chiropractors as potent aids in replacing subluxated vertebrae. Even a "straight" chiropractor, it has been stated, may use such aids, provided only that he explains to his patient that they are not truly a part of chiropractic. By such an explanation, it is supposed, he may satisfy his chiropractic conscience and keep the chiropractic strain pure and undefiled.

More recently, further expansion of the chiropractic group has been shrewdly provided for in statutes for the licensing of chiropractors. The New Mexico act of 1921 authorized the chiropractors of the state to diagnose and treat all manner of infirmities:

> by the use of any or all methods as herein provided, such as palpating, diagnosing, adjusting and treating diseases, injuries and defects of human beings by the application of manipulative manual and mechanical means, including all natural agencies imbued with the healing art, such as food, water, heat, cold, electricity, vacuum cupping and drugless appliances, without the use of drugs or what are commonly known as medicinal preparations, or in any manner severing or penetrating any of the tissues of the human body known as surgery.

The California act of 1922 was more shrewdly drawn, in that it provided that a chiropractic license—

> shall authorize the holder thereof to practice chiropractic in the state of California as taught in chiropractic schools or colleges; and, also, to use all necessary mechanical and hygienic and sanitary measures incident to the care of the body, but shall not authorize the practice of medicine, surgery, osteopathy, dentistry or optometry, nor the use of any drug or medicine now or hereafter included in materia medica.

The Maine act of 1923 followed in a general way the California act just quoted, providing that a license to practice chiropractic

> shall entitle the person to whom it is granted to practice chiropractic in any county in this state, in all its branches as taught and practiced by the recognized schools and colleges of chiropractic, but it shall not authorize the holder to practice obstetrics so far as the same relates to parturition, nor to administer drugs or perform surgical operations with the use of instruments except as now allowed by statute.

Just how broadly the courts will construe the California and Maine chiropractic acts is not clear. By implication, the chiropractors of California may all use any drug or medicine except such as are "included in materia medica," whatever that may mean. The interpretation of the phrases, "as taught in chiropractic schools or colleges" and "as taught and practiced by the recognized schools and colleges of chiropractic," is difficult. Probably the chiropractic proponents of these laws had in mind the possibility of extending the field of their activities from time to time through the simple expedient of inducing their colleges to enlarge their curriculums. The courts, however, may construe the phrases quoted above as applying to the curriculums in effect when the acts were passed. If a decision can be postponed long enough, however, the courts may be influenced by the construction placed on these statutes by the officers charged with the duty of carrying them into effect.

The first annual report of the Board of Chiropractic Examiners of the State of California, 1923-1924, discloses the fact that any chiropractic school, in order to be in good standing and to have its graduates admitted to examination in California, must include in its curriculum the study of elementary chemistry and toxicology, 100 "hours"; bacteriology, 100 "hours," and obstetrics and gynecology, 100 "hours." An "hour" is defined as forty-five minutes "or the equivalent thereof." Once chemistry, toxicology, bacteriology, obstetrics and gynecology are established in the chiropractic curriculum, pharmacology, therapeutics and surgery will promptly follow. Then will follow the cry of chiropractic, echoing the present cry of osteopathy, for the substantially unrestricted right to enter the practice of medicine and surgery, by its own carefully planned back door.

THE PARATHYROID HORMONE—A WARNING

The experimental investigation of at least one "active principle" or hormone elaborated by the parathyroid glands seems to be attended with noteworthy success. The efforts of Hanson and of Collip, in particular, deserve commendation.[1] The recent studies of Collip and Clark[2] at the University of Alberta in Edmonton have already been carried over sufficiently long periods to make it more than likely that suitably prepared parathyroid extracts contain a substance or substances that will afford complete replacement therapy in the case of the totally parathyroidectomized dog. This demonstration is, indeed, another notable step in advance in relation to the physiology of the endocrine organs. The methods thus far developed indicate that any extract of fresh ox glands that has been made by a process of weak acid hydrolysis and is sufficiently concentrated contains more or less of the active principle. The Canadian investigators have already proposed, as a provisional unit of potency, one one-hundredth of the amount of extract that will produce an average increase of 5 mg. in the content of calcium in the blood serum of normal dogs of approximately 20 kg. of body weight, over a period of fifteen hours. This reference to changes in the composition of the blood makes the definition of the standard unit somewhat analogous to that which has been widely adopted for insulin. The one hormone mobilizes calcium into the blood stream; the other promotes the utilization of circulating blood sugar.

These endocrine hormones are attracting the interests of biochemists in unusual degree. The prize of successful isolation, so brilliantly attained in the case of epinephrin and thyroxin, still remains unawarded in the study of the pancreatic and parathyroid hormones. Abel and Geiling have recently made some progress in the concentration and purification of insulin; and Collip and Clark have already secured the parathyroid product in more purified, concentrated and stable form than ever before. It may be well at this time to preclude undue haste in the possible human applications of this hormone by pointing to some manifest dangers. Injections of even very small amounts of potent extract repeated at intervals of a few hours into either normal or thyroparathyroidectomized animals have invariably proved fatal when the injections were continued. Such results were due to long maintained hypercalcemia induced in the first place by the pyramiding of the effect of each successive injection on the preceding one. As a general rule, however, hypercalcemia is without ill effect if the condition is not maintained. Unfortunately, no satisfactory antidote has yet been found to offset the fatal issue.

In uniformity with what has been observed for other tissue extracts, the purified extracts of the parathyroid cause a slight fall in blood pressure after intravenous injections. Subcutaneous administration, unless massive doses are used, has little or no immediate effect on blood pressure. Hypercalcemia can be induced by the use of the parathyroid hormone even in a fully anesthetized animal. There appears, under any condition, to be a definite limit to the degree of calcium mobilization possible in the blood, the highest concentration (in the dog) being about 20 mg. per hundred cubic centimeters of blood. The blood phosphorus shows very little fluctuation during the period of calcium increase; but when a marked hypercalcemia is developed the phosphorus may increase progressively. It is thus obvious that an agency of marked and decidedly unique potency has been placed in the hands of the investigator. What the clinician may do with it remains to be seen.

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[1] The Parathyroid Hormone, editorial, J. A. M. A. 84:1499 (May 16) 1925; The Parathyroid Hormone—Retrospect and Prospect, ibid. 85:118 (July 11) 1925.

[2] Collip, J. B., and Clark, E. P.: Further Studies on the Physiological Action of a Parathyroid Hormone, J. Biol. Chem. 64:485 (June) 1925.

Current Comment

HELIOTHERAPY AND THE BLOOD OF TUBERCULOUS ADULTS

Enthusiasm for new accomplishments in medicine may often lead to unwarranted expectations. This is, of course, only an illustration of the tendency to generalize on the basis of a few data of limited application. Consequently, those who are concerned with the healthy progress of therapy must continually be watchful lest the announcement of some novel procedure lead to its hasty recommendation in fields in which its application has no real warrant on the basis of scientific evidence. This does not mean that experiment with the new is never justified; on the contrary, it is precisely by this method that advances sometimes arise. A test, however, should always be undertaken with full realization that its potentialities are still hypothetic rather than fully demonstrated. There is now available convincing indication that the sun's rays or equivalent radiations within the range of the ultraviolet rays may exercise a stimulatory or regulatory influence on the metabolism of calcium and phosphorus under the pathologic conditions encountered in rickets and allied disorders. These present a state in which the level of the content of these elements in the circulating blood has been lowered. There has long been a belief that in the tuberculous person there may be some involvement of the element calcium in the unusual processes going on. Calcium has been supposed, for example, to assist in the formation of tubercles as a part of the healing process. Recent trials of Howe and Medlar[1] to determine the effect of intensive quartz lamp therapy on the blood of tuberculous adults have failed to show any effect on the calcium or phosphorus content. In fact, there was no evidence of abnormal metabolism of these elements. It is not denied that radiant energy may be of great benefit in some cases; but the explanation of possible clinical advantage must be sought elsewhere than in the increased "mobilization" of calcium and phosphorus.

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[1] Howe, M. G., and Medlar, E. M.: The Calcium and Inorganic Phosphorus Content of the Blood Serum in Tuberculosis: Observations on Patients Undergoing Alpine Lamp Treatment, Am. Rev. Tuberc. 10:408 (Dec.) 1924.

THE LOS ANGELES TIMES AGAIN

At various times The Journal has called attention to the extensive gallery of medical fakes and fads that have appeared in the advertising pages of the Sunday magazine section of the Los Angeles *Times*. The same section of this newspaper carries and has carried for many years a department entitled "Care of the Body." It was and is essentially quackish in character and violently opposed to scientific medicine. For a long time this department was conducted by Harry Ellington Brook, a chiropractor and "drugless" faker who secretly exploited a "patent medicine" and defrauded the public in its sale. Brook died in May, 1924, and shortly after his death the government issued a fraud order against the swindle that he had been conducting for many years. The department "Care of the Body" undoubtedly attracts to the advertising pages of the *Times* a rich assortment of quacks and faddists. Presumably, therefore, the department was much too valuable a one from a business point of view for the *Times* to abandon at Brook's death. It is now carried on by one Philip M. Lovell, who, like Brook, places the letters "N.D." after his name, meaning, presumably, "Nature Doctor." Incidentally, Lovell's name appears in the Los Angeles telephone directory for 1924 as a "physician and surgeon," but does not appear under the tabulation, "chiropractor," "osteopath," "naturopath," etc. It might be well for the telephone company of Los Angeles to be a little more careful in the compilation of its data. A Los Angeles physician now sends us some pages from the magazine section of the Los Angeles *Times* for July 26. Lovell, in the "Care of the Body" department, has a brief article on "Medical Publicity" in which he deals with the bulletins on such subjects as health, child rearing and diet issued by the United States government. Lovell then makes this statement:

> The health bulletins issued as free publicity propaganda by the various Washington departments are nothing more than unpaid-for educational propaganda under the government and supervision of the American Medical Association. Putting it in clearer language, the government health bulletins are written by and under the supervision of the American Medical Association, the regular, orthodox, bug-juice-squirting, tonsil-clipping, adenoid-dissecting, political-power-seeking clique of doctors who have control over the health administration of our public institutions.

This farrago of falsehoods is run by the Los Angeles *Times*, although it is unthinkable that its editors believe a word of it. One wonders whether the news and editorial departments of the *Times* are equally unreliable and undeserving of credence.

State Director of County Health Service.—In the state health agency there should be a state director of county health service, who should be preferably the assistant state health officer, with administrative charge of the organization and maintenance of county health departments.—Parran, Thomas, Jr.: *Pub. Health Rep.* **40:**986 (May 15) 1925.

Association News

THE DALLAS SESSION

Time and Place of the Seventy-Seventh Annual Session

The Board of Trustees of the American Medical Association has unanimously decided on April 19-23, 1926, as the date for the Seventy-Seventh Annual Session of the Association, to be held in Dallas, Texas.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, *etc.*)

ALABAMA

Move Against Illegal Practitioners.—Five members of the Etowah County Medical Society, Gadsden, filed a complaint in circuit court, July 15, seeking to prevent F. C. McLosky, a chiropractor, from further practice. This move is said to be part of a state-wide campaign against all kinds of irregular practitioners. Last month quo warranto proceedings were filed against M. R. Ferguson, Attalla, who, it is reported, claims to be a "sarcologist."

ARKANSAS

Missouri Pacific Health Train.—A twenty-four day health educational campaign was begun, July 20, when the Missouri Pacific health special arrived at Fort Smith. About 400 people in this small city heard the lectures and saw the exhibits, most of which are being used in a campaign to control malaria. Among those with the train at various times were the secretary of the Arkansas State Board of Health, Dr. Charles W. Garrison; Dr. Theodore Freedman, assistant district surgeon; Dr. Paul F. Vasterling, chief surgeon, and Dr. Charles S. Holt, division surgeon, for the Missouri Pacific.

CALIFORNIA

Changes in Health Officers.—Dr. Roscoe C. Main, health officer of Monterey County, has taken over the public health administration of the cities of Monterey and Pacific Grove, both of which are included now in the county health unit. Dr. Main's address will be at Salinas.——Dr. Smith McMullin, Yuba City, has been appointed health officer of Sutter County, to succeed Dr. William L. Stephens, Meridian.——Dr. F. W. Townsend, Loyalton, has been appointed health officer of Sierra County, which office has been vacant since the departure of Dr. Albert O. Eckhardt to the Pribilof Islands.——Dr. H. S. Gordon has been appointed health officer of Perris, to succeed Dr. Daniel W. Sheldon.

COLORADO

Society News.—Surg. Gen. Merritte W. Ireland, U. S. Army, addressed the Denver Medical Society, June 26.——Dr. Allen K. Krause, associate professor of medicine, Johns Hopkins University Medical Department, Baltimore, recently gave a series of lectures in Denver on "Tuberculosis."

Research in Tuberculosis.—The Colorado Foundation for Research in Tuberculosis, which was recently established with Dr. Gerald B. Webb, Colorado Springs, as research director, has already an endowment fund of $100,000 and has been pledged the income from another $100,000 for the ensuing year (The Journal, June 7, 1924, p. 1868).

Community Hospital at Boulder.—The University of Colorado, having moved the medical school to Denver, has planned to convert the old hospital building at Boulder to other uses. The chamber of commerce therefore undertook to raise funds to construct a new hospital by popular subscription, and ground was broken in June. The present Boulder Hospital will be remodeled, and there will be a new four story unit with thirty-seven additional beds and an operating department. The hospital will then have a total capacity of fifty-two patients. The new section will cost about $60,000.

FLORIDA

Health Officer Resigns.—Dr. Alva C. Hamblin tendered his resignation as city health officer of Tampa, effective August 1.

New State Health Officer.—Dr. Burdett L. Arms, Jacksonville, has been designated acting state health officer of Florida to serve until the successor of Dr. Raymond C. Turck, who retired August 1, is appointed.

New President of State Board.—At the first meeting of the new state board of health in the governor's office, Tallahassee, July 18, Charles H. Mann, Jacksonville, was elected president of the board, it is reported, the other members of which are Dr. Henry Mason Smith, Tampa, and Dr. William D. Nobles, Pensacola.

ILLINOIS

Physician Under Bond.—Dr. Louis H. Hayes, Alton, has been held under a bond of $5,000 to the federal court at Springfield, on a general charge of violating the national prohibition law, it is reported.

Society News.—The Lee and Ogle counties medical societies held a joint meeting and picnic at Lowell Park, Dixon, July 22, at which Dr. Dean Lewis, Chicago, gave an address on "Infections and Their Treatment," and Dr. George F. Dick, Chicago, on "Scarlet Fever Antitoxin."

Chicago

Faculty Appointments.—Among the appointments announced by the University of Chicago are those of Drs. George M. Curtis and Lester R. Dragstedt to be associate professors of surgery, Lieut. Col. Junius C. Gregory, U. S. Army, retired, to be assistant clinical professor (military medicine) in Rush Medical College, Dr. Charles Philip Miller, Jr., of the Rockefeller Institute for Medical Research, New York, assistant professor of medicine, and Dr. Chester M. Van Allen, assistant professor of surgery.

Medical Schemes.—The Chicago Medical Society *Bulletin* says that a so-called medical association is trying to sell stock to physicians with the idea that they will be employed to care for patients which the association may contract to attend. This organization claims, it is said, to be able to get in touch with large organizations and to contract to care for large numbers of people at so much monthly per member or family. There is another scheme doing about the same thing for 75 cents monthly for the whole family. This organization is appointing physicians in various districts to take care of its members on a schedule basis. The *Bulletin* cautions physicians to look into these organizations before making any alliance. Physicians who call in person at the offices of the Chicago Medical Society will be given information confidentially regarding these "new organizations."

Personal.—Dr. Arthur J. Cramp, head of the Bureau of Investigation, American Medical Association, Chicago, addressed the summer session students, department of hygiene and public health, University of Michigan, Ann Arbor, July 30, on "The Nostrum and the Public Health."——Dr. Truman W. Brophy, Chicago, was awarded the Miller prize for dental research at the International Dental Federation, Geneva, Switzerland, August 3, and was also made an honorary member of the Swiss Odontological Society.——Dr. Allen K. Krause, associate professor of medicine, Johns Hopkins University Medical Department, Baltimore, will give a series of lectures in Chicago, October 1, under the auspices of the Chicago Tuberculosis Institute, one to medical students, another to nurses and social workers, and another to physicians.

INDIANA

Physician Sentenced.—Dr. Charles E. Burris, a colored physician, 527 Agnes Street, Indianapolis, was sentenced June 23, to three years at Leavenworth prison and fined $500, after having been found guilty of violation of the Harrison Narcotic Law, it is reported.

Hospital News.—At a meeting of the staff of St. Francis Hospital, Beech Grove, recently, Dr. Vincent A. LaPenta was elected president; Dr. Raymond A. Butler, secretary, and Dr. Lindley H. Stafford, treasurer.——W. D. Williams, Richmond, has made a gift of $25,000 for the Rotary Convalescent Ward of the Riley Memorial Hospital, Indianapolis.

Fund for Research.—Eli Lilly & Company, manufacturers of pharmaceutical preparations, has arranged with Indiana University to donate $1,200 a year for five years to be used in research work. The fund will go to the department of surgery the first year, and Dr. Willis D. Gatch will have charge of the work. The trustees will decide later which other departments will receive funds.

IOWA

Hospital News.—Work has been resumed on the construction of the Iowa Lutheran Hospital, Mason City. The hospital is expected to be in operation this fall.

Report of Medicolegal Committee.—At the last meeting of the Iowa State Medical Society, the medicolegal committee reported, among other things, that from April 1, 1924, to April 1, 1925, twenty new cases came before the committee, in which the total amount of damages asked was more than $350,000. During this period eighteen cases were disposed of and seven cases settled at a cost of $7,600, and one judgment was obtained against a physician for $200. The committee dealt with a total of twenty-nine cases, four of which were dismissed at the plaintiff's cost. The attorneys' fees during this period amounted to more than $5,900.

First Meeting of New State Board.—The first formal meeting of the new state board of health was held, July 14-15, at which Dr. Harley L. Sayler was elected president of the board for the ensuing year, and Dr. Don M. Griswold, state commissioner of health, was elected secretary. The board considered, among other things, regulations for the control of communicable disease and will shortly publish new rules incorporating changes made. The plan of the state department of health for a survey of stream pollution was authorized, and three sanitary engineers added to the staff to handle this work and the sanitation of bathing beaches.

KANSAS

New University Proposed in Kansas City.—Reports state that plans are being made by the Methodist Episcopal Church to establish a new university in Kansas City. According to the Kansas *Citian*, a campaign to raise $5,000,000 for the enterprise will be made sometime between January and June, 1926.

KENTUCKY

Hospital News.—Somerset General Hospital, Somerset, it is reported, will be incorporated and owned by fifteen physicians. Dr. Achilles W. Cain is now in charge.——The Pulaski County Hospital, Somerset, was recently opened.

Personal.—Dr. Jethra Hancock has been promoted to the rank of lieutenant colonel in the Medical Officers Reserve Corps of the U. S. Army.——Dr. Finis M. Travis, Benton, has been appointed medical director of the state reformatory at Frankfort.

LOUISIANA

Personal.—Dr. Samuel F. Elder has been appointed senior house surgeon and Dr. Richard O. Russell, senior medical officer at the Charity Hospital, New Orleans.

Mosquito Control.—Acting Surg. Gen. Mark J. White, U. S. Public Health Service, has transmitted to Dr. Oscar Dowling, president, Louisiana State Board of Health, the recommendations of Mr. J. E. LePrince, senior sanitary engineer, for eliminating the mosquito from the coast of Mississippi and Louisiana. Three years of intensive work will be needed for this project.

Hospital News.—The Louisiana Tuberculosis Commission has adopted plans for the hospital at Greenwell Springs, East Baton Rouge Parish, the estimated cost of the first unit being $50,000. The commission has about $27,000 with which to undertake the work.——Dr. William J. Devlin has been appointed roentgenologist at the Charity Hospital in New Orleans to succeed Dr. J. G. Donald, resigned. This hospital recently obtained a loan of $65,000 to help defray the expense involved in the erection of the new Dibert Memorial Hospital for tuberculosis patients.

MARYLAND

Building at Eudowood Opened.—Dr. William A. Bridges, superintendent of the Eudowood Sanatorium, Towson, has announced the opening of the new medical building which is equipped for the diagnosis and treatment of tuberculosis. This building adds ten rooms, each with bath and a private porch, to the accommodations of the institution.

Personal.—Dr. Hugh H. Young, clinical professor of urology, Johns Hopkins Medical School, Baltimore, has accepted the chairmanship of the executive committee of the Chesapeake American Red Cross Life-Saving Corps. The aim of the organization is to establish life-saving stations in about 500 communities along Maryland's water-front region.

Death from Typhus Fever.—The death of a resident of Maryland from typhus fever has been reported to the state department of health. Dr. Robert H. Riley, chief of the Bureau of Communicable Diseases, stated that the patient was a woman who lived near St. Michaels who had just returned from Atlantic City when stricken. This is the first case of typhus fever in the counties this year.

Applicants for Treatment for Rabies.—The desire for precaution in cases of dog bites and an awakened public interest are the reasons assigned for the number of Pasteur treatments given in July by the state department of health. At least seventy-three persons applied for treatment, the largest number in any one month in the history of the Pasteur Division, which was established in 1915. The bureau has had a monthly average of twenty cases for treatment for rabies, and in June more than fifty persons applied. Dr. Caleb W. G. Rohrer, chief of the Pasteur Division, advised that dogs should be vaccinated against rabies to protect the public as well as the dogs.

Society News.—Dr. J. M. H. Rowland, dean, professor of obstetrics, University of Maryland School of Medicine, has accepted an invitation of the Medical Association of Wicomico County to give a series of lectures at Salisbury before members of that association and physicians of adjoining counties. Dr. Rowland gave the first lecture, July 28, assisted by members of the staff of the Bureau of Child Hygiene of the state health department. It is planned to repeat these lectures in other parts of the state, if county medical societies are interested.——Dr. Waitman F. Zinn, Baltimore, addressed the Allegheny County Medical Society, July 24, on "Bronchoscopy and Esophagoscopy" in Cumberland. The lecture was illustrated by lantern slides showing stricture and also foreign bodies removed from the esophagus.

Appointments at Wilmer Institute.—Dr. Cecil H. Bagley, instructor in surgery and assistant resident physician, Johns Hopkins Hospital, Baltimore, has been chosen first resident for the Wilmer Institute, which will open in the fall. Dr. Bagley has lately been at Manhattan Eye Hospital, New York, and at other centers observing surgical methods. He is a graduate of Johns Hopkins University and Medical School and was appointed to the surgical staff in 1922. He will be first assistant to Dr. Wilmer. Dr. Jonas Stein Friedenwald, instructor in pathology, Johns Hopkins Medical School, is to be added to Dr. Wilmer's staff to conduct research work in eye diseases. Dr. Friedenwald is a graduate of Johns Hopkins University and Medical School, class of 1920, and was appointed to the faculty in 1923. An announcement of the complete staff of Wilmer Institute will be made on Dr. Wilmer's return from Europe, this month.

MASSACHUSETTS

Memorial to Dr. Buck.—Physicians and friends of the late Dr. Augustus W. Buck have presented to the Union Hospital in Fall River a new ambulance as a memorial to Dr. Buck. The body is of special design furnishing accommodation for five patients.

Shellfish Area Condemned.—The Shellfish-bearing flats of Newburyport Harbor, together with the Merrimack River and adjacent and tributary waters, have been decreed contaminated by the Massachusetts Department of Public Health, which will therefore not permit taking shellfish from these areas.

MICHIGAN

Personal.—Dr. James J. Woods has taken up the duties as city health officer of Ypsilanti.——Dr. Rayburn B. Smith has been elected president of the school board of Alma.

Chlorin Tanks for Bathing Beach.—The commissioner of health of Detroit announced, July 20, that three chlorin gas tanks, each of 100 pounds capacity, would be installed at the Belle Isle bathing beach in an effort to prevent the pollution of the water.

Dr. Pickett Appointed Health Officer.—Mayor Tausend of Saginaw announced, July 21, that Dr. William H. Pickett, health commissioner of Great Falls, Mont., has been appointed city health officer. Dr. Pickett was formerly deputy state health commissioner for Missouri; he served in the army during the World War.

Hospital News.—At the annual meeting of the Sanatorium and Benevolent Association at Battle Creek, July 15, among others, Dr. John Harvey Kellogg, Dr. Walter F. Martin, Dr. Alfred B. Olsen and Dr. Charles E. Stewart were elected members of the board of trustees. Dr. Olsen succeeds George H. Murphy, who has been a member of the board for forty-five years.

Home-Coming Celebration.—The Alpena County Medical Society cooperated with the Alpena Home-Coming Committee, July 8, in a home-coming for physicians who formerly practiced in Alpena or received their high school education there, and thirty physicians returned for the celebration. According to the *Journal of the Michigan State Medical Society*, more than 1,000 persons whose birth Dr. Duncan A. Cameron attended took part in a procession in his honor. Dr. Johnston B. Kennedy was the principal speaker; a reception and dance completed the Cameron Day program, which was arranged by laymen with the exception of the ball game and dinner arranged by the medical society.

MISSOURI

Establishing County Health Departments.—Surg. Thomas Parran, Jr., U. S. Public Health Service, has been directed to proceed to Jefferson City, Mo., and such other points in Missouri and Kansas as may be necessary in the next three months and return, to confer with public health officers and local authorities relative to the development and formulation of programs for the conduct of full-time rural health service in those states.

Personal.—Acting Surgeon Paul K. Jenkins, St. Louis, has been directed to proceed to Ellis Island, New York, for assignment to duty with the U. S. Public Health Service.——Dr. William J. Bryan, who was formerly connected with the Fulton State Hospital, has been appointed superintendent of the State Tuberculosis Sanatorium at Mount Vernon.——Dr. W. W. Johnston, formerly of Carlsbad, N. M., has been appointed deputy state commissioner of health and field agent, U. S. Public Health Service, with headquarters at Flat River.

Dr. Graves Will Lecture in Scotland.—Dr. William W. Graves, professor and director of the department of mental and nervous diseases, St. Louis University School of Medicine, St. Louis, has been invited to deliver a lecture under the auspices of the William Ramsay Henderson Trust in the University of Edinburgh, October 16. The subject will be "The Relations of Shoulder Blade Types to Problems of Mental and Physical Adaptability." Prof. Arthur Robinson, director of the department of anatomy, University of Edinburgh, or the Rt. Hon. Lord Salvesen, P.C., K.C., a trustee of the Henderson Fund, will preside at the meeting.

Governor Opens Health Education Campaign.—Governor Baker was the principal speaker at the first meeting of the campaign for public health education at Rolla, July 24. The governor reviewed the history of the medical profession and contrasted the ethical physician with the charlatan and quack. The meeting was attended by more than 400 people. The state board of health is cooperating in the campaign, and the president, Dr. Emmett P. North, and the secretary, Dr. James Stewart, as well as the assistant attorney general, J. Henry Caruthers, gave addresses. Dr. North reminded the audience that the laws of the state concerning the practice of medicine are defective and that this was responsible for so many untrained and uneducated practitioners in Missouri. He stated that the state medical association had attempted to correct this condition at the last legislative session and that the bill failed because many legislators are not informed about the seriousness of untrained persons practicing medicine. It became necessary, therefore, to educate the people in matters of hygiene and sanitation, that they may instruct the legislators to make laws which will prevent incompetent practitioners treating the sick.

NEBRASKA

Society News.—At the recent meeting of the Republican Valley Medical Association at Franklin, Dr. William F. Dugan, Campbell, spoke on "The Expert Medical Witness"; Dr. Peter A. Sundbury, Holdrege, on "Diabetes Mellitus"; Dr. Joseph N. Campbell, Stamford, on "The Kidney of Pregnancy"; Dr. Clay E. Mollinaux, on "Congenital Kidney," and Dr. Luther F. Egen, Hastings, on "Jaundice."——The Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society cooperated in a heart clinic, which was held at Laurel, June 17, and conducted by Dr. William N. Anderson, Omaha, and Dr. William D. Runyon, Sioux City.

NEW YORK

Hospital News.—Dr. Sigismund S. Goldwater, New York, has been engaged as consultant in the construction of the Syracuse Memorial Hospital, which will be erected near Syracuse University.——A new measles pavilion has been provided for the contagious disease hospitals in the city to take the place of the one closed in 1924 by the health commissioner; other improvements at these hospitals include roentgen-ray outfits at the Willard Parker and the Kingston Avenue hospitals, and pathologic laboratories at the Willard Parker and the Riverside hospitals. A sixty room isolation hospital will be provided at the former institution at a cost of $240,000.

Midwives in New York.—There are now 409 midwives licensed to practice in the state, exclusive of the cities of New York and Rochester. They are distributed in 133 localities, in only sixty-seven of which they are under the supervision of local public health nurses who report quarterly to the state department of health. The latest available figures of the department show that 9.3 per cent. of the total births registered upstate in 1923 were reported by midwives. Since January 1, this year, licenses have been issued to fifteen midwives, five of whom had diplomas from schools recognized by the department of health; the other ten presented qualifications showing "superior training and experience."

Jamestown Eye Survey Completed.—A city-wide survey with special reference to eyesight of school children was recently completed in Jamestown. Through the cooperation of the New York State Board of Education, the Jamestown public schools, the New York State Commission for the Blind, and the New York State Committee for the Prevention of Blindness, which is a standing committee of the National Committee for the Prevention of Blindness, approximately 8,000 school children were examined. The study, while primarily an eye survey, also included the examination of the ears, noses and throats. A complete report of the study will be made available within a short time, which will show the amount of defective vision existing in a school population of 8,000 children; what percentage of this can be corrected; what percentage of children should be given specialized education, and who shall make the yearly examination of the eyes of school children.

New York City

Ban on Celery.—The New York City Board of Health ordered three large celery growers in Bergen County, New Jersey, to discontinue delivering their products in New York City. It was found, it is reported, that the county tuberculosis and isolation hospitals in Paramus Borough adjoined the celery farms and that there was a leakage of sewage from the hospital tanks.

Portraits of Physicians.—The collection of portraits of physicians presented to the Academy of Medicine by Dr. Charles L. Dana has been recently augmented by the following portraits:

Govard Bidloo
Joseph Black
Hermann Boerhaave
Ephraim Bonus
William Cowper
Thomas Browne
J. F. Blumenbach
Robert Glynn
Johannes Heins
Nathaniel Highmore
Edward Jenner
Nicholas Abraham de la Framboisière
Richard Mead
Henry Moyes
Ph. Th. A. Paracelsus
Ambroise Paré
John Patch
Ernst Platner
François Rabelais
Erasmus Darwin
George Fordyce
Theophile de Garencières
Samuel Garth
Johann Georg Gmelin
Claudius Galen
Johann Albert Heinrich Reimarus
Moritz H. Romberg
Antonio Scarpa
Nicholas Tulp
Bernhardus Verzascha
Rudolph Virchow
John Wasdale
Sir Thomas Watson
James R. Wood

NORTH CAROLINA

Hospital Endowed.—Mr. E. D. Latta, Asheville, recently died leaving a will creating a charitable endowment of about two million dollars. One half of the income is to inure permanently to the benefit of the Asheville Mission Hospital, providing especially for the immediate construction of a nurses' home and a free maternity ward.

Commission on State Institutions.—Dr. Watson S. Rankin, medical member of the Duke Foundation, and Dr. Thurman D. Kitchin, dean and professor of physiology and pharmacology in the Wake Forest College Medical Department, Wake Forest, have been appointed members of a commission to report to the governor on the condition of the state institutions. Three well known business men are also members of the commission.

New Commanding Officer at Oteen.—Dr. Herbert E. Whitledge, medical officer in charge, U. S. Veterans' Bureau Hospital, Oteen, N. C., has been relieved by Dr. Edward P. Odend'hal, Washington, D. C. Dr. Whitledge has been in active service continuously for a long period and will have an indefinite leave. Dr. Odend'hal was executive officer at Oteen in 1920, later commanding officer at Hospitals No. 84, New Orleans, and No. 41, New Haven, Conn., and more recently at the new 500 bed hospital (No. 96) in the Adirondacks, from which he went to Washington as chief of tuberculosis hospitals for the Veterans' Bureau.

Licenses Revoked.—The North Carolina State Board of Medical Examiners, after due notice, at a called meeting of the board, recently revoked the license to practice medicine in North Carolina of Drs. Edwin H. Bowling, Durham, N. C.; Thomas A. Smith, Charlotte, N. C., and Harvey Robinson, Reidsville, N. C., following convictions in the federal courts of violations of the Harrison Narcotic Law. The North Carolina laws do not permit the revocation of licenses by the board of examiners without the accused having been served with formal notice and having an opportunity to be heard, for which reason the board has not acted on the cases of Drs. Memory F. Boyles, Gastonia, and Frank V. Taylor, Dallas, both of whom are now serving sentences in the federal penitentiary, Atlanta, Ga., for similar convictions. The board has issued formal summons to the sheriffs of Durham and Buncombe counties for service on Drs. James F. Brewer, Ptolmey P. Chambers, Garret D. Gardner, George W. Purefoy, and Thomas W. Sumner of Buncombe County, and Needham P. Boddie, Ira J. Stoner and William A. Strowd of Durham County, all of whom have recently been convicted of violating the Harrison Narcotic Law. These cases will be heard by the board at a special hearing in Greensboro, September 15. Indications point to a session of the board extending over a few days possibly, as the convicted physicians have employed legal talent to resist the action of the board. The leading members of the profession, and many laymen are congratulating the board on its manifested disposition to comply with the North Carolina statutes.

NORTH DAKOTA

Six Deaths from Infantile Paralysis.—Following an inspection by the state health officer, it was reported, July 21, that six deaths had occurred in Nelson, Ramsay and Walsh counties from infantile paralysis. There had then been a total of thirteen cases in these counties. Public gatherings have been prohibited in an area about 50 miles square north of Lakota.

OHIO

Hospital News.—The Community Hospital, which is conducted by six villages, has been opened at Berea. The building cost $125,000.——The Deaconess Hospital, Cincinnati, has announced plans for an eighty-bed addition, and has planned a campaign for funds.——Bids are being taken at the Mount Sinai Hospital, Cleveland, for buildings that will cost $1,350,000.

Personal.—Dr. Harry E. Kleinschmidt has resigned as executive secretary of the Toledo Public Health Association, effective August 1, in order to accept a position as head of one of the divisions of the state department of health.——Dr. Arlington Ailes resigned, July 24, as health commissioner of Sidney to become director of hygiene of the LaSalle Institute, LaSalle, Ill.

Society News.—Dr. Frank Warner, Columbus, addressed the Hardin County Medical Society, Kenton, recently, on differential diagnosis of acute intra-abdominal diseases.——Dr. J. R. Heath, Grover Hill, was elected president of the Tri-County Medical Society, at the annual meeting, Van Wert; Dr. John T. Gibbons, Celina, vice president, and Dr. Hubert Ray Chester, Van Wert, secretary.

Injunction Against Chiropractors' Proposal.—Judge Scarlett, Columbus, granted a temporary injunction, July 24, restraining the secretary of state from proceeding to submit to popular vote in November the proposal for a separate board of chiropractic examiners in Ohio. The court held that the supplemental petitions necessary had not been filed within ninety days after the bill to create a special board of examiners had been lost in the legislature. More recently the Ohio State Medical Association reports that the court of appeals has affirmed the foregoing decision of Judge Scarlett in the common pleas court, thereby sustaining the "permanent injunction . . . as prayed for."

OKLAHOMA

Society News.—Dr. Victor C. Tisdal, Elk City, has been reelected president of the Beckham County Medical Society, and Dr. William D. Oliver, Erick, reelected secretary.——The Ottawa County Medical Society has purchased a camp on the Elk River, where it plans to hold meetings as well as use the place for outings.

Personal.—Dr. Ernest W. Reynolds was recently elected city physician of Bristow, succeeding Dr. Oscar S. Coppedge.——Dr. H. Clay Manning, Cushing, has leased the Cushing Municipal Hospital for another year.——Dr. Charles N. Caton, Ravia, has been appointed county health officer.——Dr. James W. Craig, Vinta, has been reappointed for the sixth time state medical director for the Modern Woodmen of America.

Hospital News.—According to *Hospital Management*, construction will begin on a thirty-bed hospital at Depew, to be erected by Dr. Oscar S. Coppedge.——The Oklahoma Hospital, Tulsa, has been sold to the Delaware Baptist Association, an organization of churches at Tulsa, Creek, Osage, Nowata, Washington and Rogers counties. The hospital for ten years has been under the direction of Dr. Fred S. Clinton, Tulsa, who under the new arrangement will be a member of the board controlling the property. The hospital will be owned and controlled by the Baptists, but will be conducted on a nonsectarian basis, and various denominations will be represented in its management. The present employees will remain.

OREGON

Hospital News.—The construction of a new wing, costing about $225,000, at the Eastern Oregon State Hospital, Pendleton, is expected to start in July.

University of Oregon Medical School.—Word has been received that the U. S. government has decided to accept the offer of a tract of land which constitutes part of Sam Jackson Park, Portland, as a site for a hospital for disabled veterans, which will cost about $1,300,000. An outstanding gift to the medical school in the last year was 88 acres of land on Marquam Hill, adjoining the present campus, by Philip L. and Dorothy S. Jackson, and named in honor of their father, Sam Jackson Park. The Portland Rotary Club recently gave $25,000 to the medical school for additional equipment in the Doernbecher Memorial Hospital for Children, which is being erected on the campus, and for the maintenance of which during part of 1926 the Oregon Chapter of the American Legion is raising $60,000, and for which the Oregon State Federation of Women's Clubs is raising $20,000 for equipment. The Portland Junior League has given $5,000 to equip the orthopedic clinic, and Dr. Noble Wiley Jones has given the school $5,000 to establish a fellowship in pathology.

PENNSYLVANIA

Personal.—Dr. Robert D. Spencer, for several years pathologist at the State Hospital, Ashland, tendered his resignation, July 14, effective October 1.——Dr. Charles E. Bredt has been appointed a member of the board of health of Mahanoy.

Charity Meeting.—George R. Bedinger, executive director of the Public Charities Association of Pennsylvania, announces that the fall meeting of directors will be held in Bethlehem, October 23. Dr. Charles H. Frazier, Philadelphia, will be toastmaster, and Dr. W. L. Estes, Bethlehem, will preside.

Report of State Department of Health.—The biennial report of the state department of health for the period ended May 31, 1924, which has just been received, states that the health problem in Pennsylvania involves 284,000 farmers, 225,000 coal miners, 1,426,000 factory workers and their families, thirty-nine cities, 933 incorporated boroughs and 1,567 townships. The cities, boroughs and first-class townships have local boards of health, but the state department is responsible for the health of the people in second-class townships. Since the creation of the department of health in 1906, the death rate from all causes in Pennsylvania has fallen 23 per cent., the death rate from typhoid fever 92 per cent., and that from tuberculosis, 40 per cent. The state department of health has carried on a campaign against tuberculosis through its 100 clinics and three sanatoriums. A campaign for better milk has resulted in fifty-four municipalities passing ordinances recommended by the department. The Sanitary Water Board is charged with the administration of anti-stream-pollution laws, and it has taken action to keep clean nearly 3,500 miles of streams which are now clean, and make sanitary surveys of many more.

Philadelphia

Bids for General Hospital.—At the second attempt to obtain bids for construction of the Philadelphia General Hospital, within the $4,000,000 appropriation, bids for the work, aggregating $3,589,900, were opened, July 31, by the director of the department of public health. The bids for construction received a week ago were more than $500,000 in excess of the $4,000,000 available, this necessitating the elimination of certain features from the plans and a readvertising of the project.

Bulletin on Smallpox.—The June-July bulletin of the Department of Public Health of Philadelphia is devoted entirely to smallpox. There are reproductions of a typical vaccination beside an immune reaction of the lesions in various stages of smallpox, and one colored plate of a severe case in the pustular stage. The last great epidemic of smallpox in Philadelphia was from 1901 to 1904, and there were 5,025 cases with 894 deaths. In the following twenty years there were 270 cases reported in the city, with seven deaths; in 1923, there were sixty cases and in 1924 thirty-three, with no deaths in either year. There was a death from smallpox, however, early in 1925, which the health department regarded as warning to prepare for a severe outbreak. A special appropriation was requested from the city council to enable the department to employ twenty additional physicians as medical inspectors. This was promptly granted, and a determined effort is being made to prevent the spread of smallpox. There had been up to June 19, this year, twenty-three deaths among 183 cases of smallpox reported. What the ultimate result of the present struggle will be, it is too early to say; but at this time the department considers the prospects hopeful.

TENNESSEE

University of Tennessee College of Medicine.—The state legislature this year appropriated $315,000 to purchase additional lots adjoining the present holdings of the university in Memphis, also $250,000 to assist in the construction of the first unit of the proposed building program; $100,000 has been donated by the citizens of Memphis also for this purpose. The first unit will be five stories high and accommodate the departments of anatomy, physiology and chemistry, and construction work will start this summer.

TEXAS

Hospital News.—The $1,000,000 Methodist Hospital, at Fort Worth, to which the citizens of that city contributed $500,000 for its erection, was formally dedicated, July 1. The hospital is nine stories high. An unusual feature will be the installation in each room of a radio for the entertainment of patients.

Society News.—Capt. William D. Gill, U. S. Army, addressed the Dallas County Medical Society, Dallas, recently on "Fractures About the Orbit" (illustrated with lantern slides).——Dr. Otto J. Potthast addressed the Bexar County Medical Society recently on "The Coffey Quarantine Pack Method of Abdominal Drainage: Its Description and Remarks on the Principles on Which It Is Based and Its Application."——Dr. John W. Tappan, surgeon, U. S. Public Health Service, addressed the El Paso County Medical Society, El Paso, recently on "Public Health Problems Along the Texas Mexican Border."

State Board Calls for Help.—Having no funds except the application fees, the state board of medical examiners is unable, according to the *Texas State Journal of Medicine*, to enforce the medical practice act. The board has appealed for help, therefore, to enforce the medical practice act, to the president of the state medical association, Dr. Charles M. Rosser. After a conference with the executive council, Dr. Rosser said in part that whatever can be done, within the bounds of the proprieties, will be done to help. He also informed the public that the enforcement of the medical practice act is the prime responsibility of the law enforcement officials of the state and only secondarily the responsibility of the medical profession as such. In conclusion, he said, "We are perhaps promising to exercise leadership in some particulars . . . but we will be acting in cooperation with the courts and the officers of the law in the enforcement of the act."

Policies of the State Society.—The newly created executive council of the Texas State Medical Society, in conference with the president, has determined on the following policies for the present administration of the society:

1. Encourage individual observation of proper ethical relations between members of the medical profession and between the medical profession and the people it serves.
2. Admonish prompt compliance with state laws relating to vital statistics.
3. Appeal to our members, individually and collectively, through the medium of moral suasion, to keep faith with the federal and state governments in the matter of prescribing narcotics and alcoholic liquors.
4. Reclaim to the association respectable physicians who have for surmountable causes allowed their membership to lapse.
5. Bring into membership all educated, honorable and legally qualified practitioners of medicine who have heretofore neglected to join their respective county societies.
6. Commend to component county societies the advisability of giving periodic publicity through the lay press to their membership roster, as an aid to the public in determining who are legally qualified to practice medicine and who may be considered ethical in their practice.
7. Give active support to the law enforcement officers and the courts, in the detection and prosecution of physicians guilty of immoral or criminal practices of any character.
8. Cooperate with the state board of medical examiners and the law enforcement officers of the state, as fully and aggressively as may be required, in prosecuting alleged violators of the medical practice act.

WEST VIRGINIA

Society News.—The new officers of the Ohio County Medical Society, Wheeling, are Dr. John E. Marschner, president; Dr. Charles H. Clovis, vice president; Dr. John G. Thoner, secretary, and Dr. Arthur L. Jones, treasurer.

Seventy-Five Chiropractors Exempted.—The new state board of chiropractic examiners granted licenses to seventy-five chiropractors, July 23, by reason of their having practiced in the state a certain time. About forty-five chiropractors who were not exempt took the examination.

WISCONSIN

Complete Medical Course at State University.—A four year medical course leading to the degree of M.D. has been established at the University of Wisconsin, Madison, the third year starting this fall and the fourth year starting the fall of 1926. Heretofore the university has offered a two year course. The completion of the new Wisconsin State Hospital, Madison, has furnished clinical facilities which made possible the new arrangement.

Infantile Paralysis Epidemic.—Regulations were issued by the state health officer of Wisconsin, July 20, forbidding residents of districts in which infantile paralysis prevails from visiting Camp Douglas, where the Wisconsin National Guard is encamped. Winona and Galesville are centers of heavily infected districts. Dr. Edward C. Rosenow of the Mayo Clinic visited the Wisconsin area, July 20. Isolation orders have been issued in Wisconsin by various health officers which, among other things, forbid children under 16 years of age from congregating in public places from July 19 to August 8.

PHILIPPINE ISLANDS

Local Antileprosy Campaign Fails.—The campaign by the Philippine Antileprosy Society to raise $50,000 for Culion Leper Colony in connection with the $1,000,000 campaign in America has failed, it is reported, and the local antileprosy society dissolved. The lack of response is said to have been due to opposition of the Spanish language papers to the leaders of the antileprosy society.

GENERAL

Increase in Typhoid Fever.—Thirty-three states reported to the U. S. Public Health Service a total of 854 cases of typhoid fever for the week ended July 11, 1925, and for the corresponding week of last year, 579 cases; 103 cities reported 192 cases of typhoid fever, and for the corresponding week last year, 142. The estimated expectancy for these cities was 134 cases.

Increase in Poliomyelitis.—Preliminary telegraphic reports to the U. S. Public Health Service indicate an increase in the number of cases of infantile paralysis this year. For the seven weeks ending July 18, thirty-two states reported 462 cases of this disease, while from June 1 to July 19, 1924, the same states reported 121 cases. California reported 154 cases in this period, this year, New York 66, Minnesota 46, New Jersey 35 and Illinois 20. An outbreak occurred in South Carolina in April, 1925, and up to July 16 there had been 102 cases reported.

Intensive Training in Chemical Engineering.—At the Tenth Exposition of Chemical Industries, Grand Central Palace, New York, September 28-October 3, there will be a one week's course of intensive training in practical technic of chemical engineering, and about twenty American colleges and universities have filed applications for their students of chemistry to take the course. More than 300 students are expected to enroll. Leading authorities on chemical engineering will be among the lecturers, and tours among the exhibits for practical demonstrations will be conducted. There will be an examination at the close of the course, some colleges having designated their intention to give credit for this work. Prof. W. T. Read of Yale University, New Haven, Conn., will be in charge of the course.

Automobile Fatalities.—The Department of Commerce announces that in thirty-six of seventy-seven cities of 100,000 population or more, there was an increase in the automobile fatalities in the four week period ending July 18 over that of the previous four week period. The following cities had no fatalities for the last four weeks: Spokane and Tacoma, Wash.; Norfolk, Va.; Oakland, Calif.; Bridgeport, Conn.; Oklahoma City and Springfield, Mass. New Bedford, Mass., still holds the record for 1925, with two deaths. Up to July 18, New York City had reported 501 automobile fatalities; Chicago, 299; Philadelphia, 149; Detroit, 127, and Los Angeles, 122. For fifty-seven cities with a total population of 27,000,000 there had been 2,511 automobile fatalities up to July 18, this year, as compared with 2,438 up to July 31, 1923.

Colored Physicians' Annual Meeting.—The National Medical Association, under the presidency of Dr. Michael O. Dumas, Washington, D. C., is making preparations for its thirteenth annual session, to be held in Chicago, August 25-29. Dr. Dumas will deliver the president's address at the opening of the session. Affiliated with the National Medical Association and in session at the same time will be the National Hospital Association and the National Association of Life Insurance Medical Examiners. Scientific sessions will be held at the Wendell Phillips High School, and medical, surgical and dental clinics at the Providence and Wilson hospitals. Public health meetings are planned under the auspices of the General Health Committee of the association, the department of public health in the state of Illinois and the U. S. Public Health Service.

Blindness Due to Industries.—In a study of eye hazards in industrial occupations, the National Committee for the Prevention of Blindness recently concluded that, of the 100,000 blind persons in the United States, about 15,000 have lost their sight in the pursuit of industrial occupations, and there is, in addition, a much larger number of persons whose vision has been so impaired in the industries that they will be handicapped through life. The metal manufacturing industries are the source of the greatest number of serious eye injuries. In Pennsylvania, the coal mining industry ranks first as a cause of industrial blindness; in Wisconsin, "hand tools" is the greatest single cause, and in a large ship building company 38 per cent. of all cases treated in its dispensary were eye injuries. The full report of this committee is a volume of 250 pages and may be secured from the Committee for the Prevention of Blindness, 130 East Twenty-Second Street, New York.

Pan-Pacific Science Congress.—The National Research Council of Japan has announced plans for the Third Pan-Pacific Science Congress, to be held in Tokyo, Oct. 25-Nov. 18, 1926. The announcement states that the main objects of the congress are (1) to promote cooperation in the study of scientific problems relating to the Pacific region, especially those affecting the prosperity and well being of the Pacific peoples, and (2) to strengthen the bonds of peace among Pacific peoples by promoting a feeling of brotherhood among scientists and through them among citizens in general. Three symposiums have been selected for discussion at the general sessions and sixteen symposiums for the divisional meetings. The First Pan-Pacific Science Congress was held in Honolulu in 1920, under the auspices of the Pan-Pacific Union; the second congress was in Sydney and Melbourne, Australia, in 1923, under the auspices of the National Research Council of Australia. Wayland Vaughan, Ph.D., director of the Scripps Institution for Biological Research and vice chairman of the committee on Pacific investigations of the National Research Council, has been appointed the representative from the United States on a committee to effect a permanent organization of scientific institutions of the various countries of the Pacific region, and Herbert E. Gregory, Ph.D., director of the Bernice Pauahi Bishop Museum of Honolulu, will represent Hawaii.

FOREIGN

Typhoid in Tokyo.—The health authorities of Tokyo have started an antityphoid campaign in which they plan to have made more than 1,000,000 antityphoid vaccinations. Typhoid has increased in Tokyo from 3,378 cases in 1922 with 794 deaths, to 4,448 cases in 1923 with 813 deaths and 5,459 cases in 1924 with 812 deaths.

Society News.—At the annual general meeting of the Royal Society of Medicine, London, in July, Sir St. Clair Thomson was elected president for the ensuing year; Sir William Hale White, past president; Drs. Charles H. Fagge and Edward Farquhar Buzzard, treasurers, and Drs. William Girling Ball and Henry Letheby Tidy, secretaries.

Institute for Food Research.—Construction work will begin shortly on a well equipped institute for food research at the Keio University Hospital, Tokyo, which will have a special laboratory connected for physiology, pathology and bacteriology. The institute will be a two story reinforced concrete structure costing about 200,000 yen, and Dr. K. Oahmori, professor of internal medicine at the university, will be in charge.

Fifty Thousand Dollars to Medical Research Council.—The trustees of the late Sir William Dunn estate set aside, July 20, $10,000 a year for five years for the Medical Research Council, London, for research work in medicine. In accepting the fund, the council announced that it would be applied chiefly to furthering its current organized studies and first of all to the study of filtrable viruses, particularly those concerned in the recent cancer researches of Barnard and Gye.

Hospitals for Persons of Moderate Means.—At the recent conference of the British Hospitals Association it was pointed out that an increasingly large number of persons of moderate means are finding it more difficult to secure the advantages of recent advances in medicine on account of the expense, and that large numbers of the middle classes are forced to seek treatment in voluntary hospitals, with the result that waiting lists obtain inordinate dimensions. The *Lancet* points out that the hospitals in England are struggling against financial difficulties and their future is problematic unless they can be established on some sounder basis than the present one, and among the schemes proposed is the extension of their wards to paying patients.

University of New Zealand Medical School.—The cornerstone of the new University of New Zealand Medical School, which is about half completed, was laid with appropriate ceremonies, by the minister of education, Sir James Parr, June 18. Sir Lindo Ferguson, dean of the medical faculty, said that eight years ago this great work was "but a dream" and that the minister has now given assurance that it must be finished, whatever the cost. The building, including the site, will represent an expenditure of about £100,000. The number of students at the medical school has increased from fifteen in 1885 to 265 in 1925. The difficulties incident to moving the school to the present site, near the hospital, have been surmounted largely through the efforts of the dean.

Cholera and Plague in India.—There were 36,045 deaths from plague reported to the Health Section of the League of Nations in the provinces of India between February 15 and April 18. The mortality during this period, the time of year at which plague is at its maximum in India, amounted to only 40 per cent. of the mortality for the corresponding period of the previous year. The improvement was mainly in the Punjab, where there were very severe epidemics in 1924. It is possible to determine now, the report says, that 1925 will be a year of low plague incidence in India. Cholera was much less prevalent in India in April than in April of the previous year, there being 7,189 deaths in the four weeks ending April 18 as against 27,501 during the corresponding period of 1924.

Deaths in Other Countries

Prof. Adolph Lazarus, collaborator with the late Professor Ehrlich, at Berlin, Germany, July 22, aged 58.

Government Services

U. S. Public Health Service

Surg. J. P. Leake has been directed to proceed from Washington, D. C., to Columbia, S. C., and to such other points as may be necessary to investigate an outbreak of poliomyelitis.——P. A. Surg. Claude W. Mitchell has been relieved from duty at Baltimore and assigned to duty at Washington, D. C., in connection with the investigation of public health hazards connected with the distribution and use of tetra-ethyl lead gasoline.——Associate Sanitary Engineer Leslie C. Frank has been directed to proceed from Montgomery, Ala., to Athens and such other points in Georgia as may be necessary, to make a study of the milk situation.——Surg. J. G. Wilson has been relieved from duty at Rosebank, N. Y., and assigned to duty at Los Angeles in connection with plague suppressive measures.——Surg. Francis A. Carmelia has been directed to assume charge of all quarantine and immigration activities at the port of Philadelphia.——P. A. Surg. R. D. Lillie has been assigned to duty at the Hygienic Laboratory, Washington, D. C.——Asst. Surg. J. J. Donovan has been directed to proceed from Danzig to Neustadt, Poland, when necessary during the fiscal year 1926 to see that the U. S. quarantine laws are enforced with regard to passengers coming to the United States.——Surg. T. J. Liddell has been relieved from duty at Port Arthur, Texas, and assigned to duty at Los Angeles in connection with plague eradication measures.——Surg. W. F. Tanner has been relieved from duty at the Hygienic Laboratory, Washington, D. C., and assigned to duty at Ellis Island, New York.——Associate Sanitary Engineer Leonard Greenburg will proceed from time to time during the fiscal year 1926, on receipt of instructions from the medical officer in charge of industrial hygiene, to Danbury, Conn., to assist and supervise in a study of mercurial poisoning among workers on felt hats at that place.

Army Personals

Lieut. Col. William A. Wickline has been directed to assume command of the St. Louis Medical Intermediate Depot after about five months' temporary duty in the office of the Surgeon General and a short period in the New York General Intermediate Depot.——Major James M. Troutt will sail from New York City, about December 4, for Hawaii.——Captains James R. Hudnall, West Point, Samuel L. Thorpe, Fort McPherson, Ga., and Harry E. Hearn, Fort Barrancas, Fla., will sail, about November 24, for the Canal Zone for duty.——Dr. John P. Russell, Washington, D. C., has been appointed first lieutenant in the regular army medical corps, and will report to the Army Medical School, Washington, D. C., for duty for instruction.——Dr. Hubert M. Nicholson was promoted from lieutenant to captain in the regular army medical corps, July 11.

Examination for U. S. Public Health Service

There will be examinations of candidates for entrance in the regular corps of the U. S. Public Health Service, September 14, at Washington, D. C., Chicago, New Orleans and San Francisco. Candidates must be not less than 23 nor more than 32 years of age and must have graduated at some reputable medical college, had one year's hospital experience or two years' professional practice. Those who pass satisfactorily oral, written and clinical tests, as well as a physical examination, will be recommended for appointment by the President with the consent of the Senate. Requests for permission to take the examination may be obtained from the Surgeon General, U. S. Public Health Service, Washington, D. C.

Postgraduate Work in the Navy

About forty navy medical officers took special postgraduate medical courses during the last year, according to the *Army and Navy Journal*, as the result of the policy inaugurated by Surgeon General Stitt. The work of the navy medical corps has broadened until now it treats the industrial hazards of about 35,000 civilian employees, conducts the sanitary education of a large native population in widely scattered islands, and treats 15,000 veterans at the naval hospitals. Naval medical officers are encouraged also, when stationed near medical institutions, to take up courses of study.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 25, 1925.

Annual Meeting of the British Medical Association

The ninety-third annual meeting of the British Medical Association was held at Bath. At the representative meeting, several medicopolitical subjects of great interest were discussed.

INDIRECT METHODS OF ADVERTISING

The subject of indirect methods of advertising has been under the consideration of the council for some time. Last year a rather strong stand was taken that all contributions to the press and interviews should be anonymous; but it was felt that this had gone too far and might defeat the intentions of the council, which therefore took the course of laying it as a duty on the physician to see that certain conditions were observed by those who controlled the organ in which contributions appeared. The council endeavored to preserve the dignity and proprieties of the profession without unduly limiting the possibility of satisfying the requirements of the press. It therefore submitted the following paragraph: "From time to time there are discussed in the lay papers topics which have relation both to medical science and policy and to the health and welfare of the public, and it may be legitimate or even advisable that medical practitioners who can speak with authority on the question at issue should contribute to such discussions. But practitioners who take this action ought to make it a condition of publication that laudatory editorial comments or headings relating either to the contributor's professional status or experience shall not be permitted; that his address or photograph shall not be published; and that there shall be no unnecessary display of his medical qualifications and appointments. There is a special claim that practitioners of established position and authority shall observe these conditions, for their example must necessarily influence the action of their less recognized colleagues. Discussion in the lay press on disputed points of pathology or treatment should be avoided by practitioners; such issues find their appropriate opportunity in the professional societies and the medical journals." The recommendation was adopted.

A BUREAU FOR LOCUM TENENTS AND ASSISTANTS

It was decided to undertake a new activity—the formation of a bureau for the provision of locum tenents and assistants, under the auspices of the association, to operate in such centers as may be deemed desirable, and to set up the organization under the control of the association by means of a separate liability company.

INDIVIDUAL MEDICAL DEFENSE

A long discussion took place on a proposal that the association should undertake individual defense. This subject has been under consideration from time to time for fifty years. The objections were still considered to be too great, and the proposal was rejected by 97 votes against 72. Among the reasons for the rejection were the facts that individual defense was being competently conducted by the existing societies, that the financial position of the scheme would be insecure at first, and that it would be detrimental to the association to have to defend conduct that might be indefensible.

EFFECT OF LIGHT ON HEALTH

In the Section of Public Medicine, Dr. Leonard Hill opened a discussion on the influence of sunlight and artificial light on health. It was, he said, quite easy, by local concentration of an arc, or by a very hot sun, to heat parts of the body—for example, the head—to a high febrile temperature. Exposure in sun boxes or under glass might easily heat up the whole body. Overheating should be most carefully avoided. Cool open air and sun were good, hot midday sun bad, for the treatment of surgical tuberculosis, as Rollier had found in the Alps. Patients with chronic tuberculosis must be protected from heat and given exposure to cool morning sun or arc lamps in cool places. Active febrile cases should be treated by light with great caution, by minimal doses—for example, sky shine, not sun—and by exposure to cool air on verandas. Cases of arthritis, on the other hand, might be benefited by heat and ultraviolet rays together. Wounds and fevers did wonderfully well outdoors, as shown by war experience, and all hospitals should no longer be brick buildings, but bungalows with open-air wards, verandas, and unroofed open-air courts about which the beds could be run according to the weather. To build new brick hospitals in cities on the old plan was out of date and unjustifiable. They must teach people to get rid of smoke pollution, wear less clothes, and expose more of their skin to light and then, with the help of arc baths and more playing-fields, we could improve health a great deal in spite of the thousands of miles of mean streets that covered the manufacturing districts. Girls, by wearing low open-necked blouses and short skirts with artificial silk stockings, secured more ultraviolet rays. Men might well alter their dress and get rid of the close collar and long trousers. While exposure of the lower part of the leg to light and to cool air had been found to be a preventive of varicose veins, overexposure in cold winter weather might produce a chilblain-like erythema. Physiologic knowledge as well as fashion should rule dress, and prevent both overexposure and underexposure. It had been stated that artificial sun treatment could not approach the real article in curative effect. Hill's experience, however, had shown that arc-light baths, properly regulated and accompanied with advice as to exposure to cool open air, exercise and diet, could effect cures in London which appeared to be no less good than those reported from alpine sanatoriums. To eliminate tuberculosis from cattle, just as from human beings, the important point was to secure adequate exposure to light and air. The practice followed by many farmers of shutting milch cows up in stables during the winter and limiting ventilation, with the idea of promoting a bigger yield of milk by warmth of the stable, should be prohibited. Cattle might be given arc-light baths in winter no less than children in schools. For cattle it was of no less importance to give food in winter which is rich in fat-soluble vitamin A. Grass-fed cattle give milk much richer in this vitamin than cattle fed on dry winter fodder.

INSOMNIA

In the Section of Neurology and Psychological Medicine, Dr. Robert Hutchinson initiated a discussion on insomnia. He divided insomnia into two classes, primary and secondary, the latter being due to some physical discomfort, such as pain, fever or cough. The primary cases were due either to mental discomfort or to the memory of it. The treatment of insomnia due to physical discomfort was necessarily the treatment of that discomfort. In the case of primary insomnia, the patient had probably been exaggerating in his own mind the results of not sleeping, and one might certainly explain to him that there was no fear of his either dying of insomnia or of going mad as a result of it—both of which dreads probably had been preying on his mind. One might also point out that health could be maintained on a much smaller allowance of sleep than most people habitually took, and that complete rest and muscular relaxation were to a large extent a substitute for it. If the patient could only be made to take up this mental attitude to his trouble, it was a big step towards curing the insomnia, for the latter was often being kept up through autosuggestion; the patient did not sleep because he went to bed dreading that he would not. If he could be made to snap his fingers at the insomnia, it would often disappear.

FOOD PRESERVATIVES

It having come to the notice of the Public Health Committee that certain proprietors were endeavoring to bring pressure to bear on the government departments concerned, the committee drafted a recommendation, which was endorsed by the council. This recommendation was approved by the representative body, and will be sent to the government department in question. It runs as follows: (*a*) The representative body is satisfied from the experiments made from the recorded cases, and also from the fact that other countries have discontinued their use, that it is essential in the interests of public health that boric acid and borons should not be used as food preservatives. (*b*) While recognizing that there are difficulties inherent in this country, due to the lack of cold storage facilities and efficient means of transport, which do not exist to the same extent in America and other foreign countries, the representative body is of opinion that, as a matter of principle, it would have been better if the example of other countries in prohibiting entirely the use of preservatives and metallic and other toxic coloring matters in foods could have been followed in the draft regulations re food preservatives, etc., issued by the ministry of health. (*c*) The members of the representative body draw particular attention to the evils that have arisen in their own experience from the importation of liquid eggs preserved with boric acid, and the representative body considers that it is essential from the public health point of view that liquid eggs preserved with boric acid or other preservative should be prohibited at once. (*d*) Subject to the foregoing recommendations, the representative body places on record its approval of the draft regulations (issued by the ministry of health, Feb. 17, 1925) with regard to preservatives, etc., in food.

RHEUMATIC INFECTION IN CHILDHOOD

In the Section of Diseases of Children, Dr. F. J. Poynton said that he believed that the tonsils were an important site of infection. He knew that skilled enucleation would not prevent a first attack of rheumatism and acute carditis of extreme severity occurring some years later. Also an acute and crippling attack of carditis might directly follow removal of tonsils in the rheumatic patient. But the successful removal of unhealthy tonsils was a valuable prophylactic step, if, undeterred by exceptions, we viewed the problem on broad lines. Every case must be considered on its merits, and he did not favor routine action. He held that the teeth and gums of children should be kept as healthy as possible, but he could trace no clear connection between acute rheumatism and dental disease in childhood. The problem today was, Can we, by concerted efforts, protect our rheumatic children efficiently, and are we justified in pressing on the public the great need of its assistance? For many years he had held that such a step, if undertaken doggedly and earnestly, would in due time, but not rapidly, revolutionize the entire subject of the treatment of organic heart disease.

Prevention of Diphtheria: Disapproval of New York System

A report has been issued by the London County Special Services Subcommittee regarding the question of adopting in London schools the treatment carried out by the department of health of New York City for rendering school children immune to diphtheria. The subcommittee states that it understands that the ministry of health is conducting inquiries with regard to the immunization of the staffs of fever hospitals and in connection with maternity and child welfare work. It is advised that these lines of investigation should be explored thoroughly before further consideration is given to the question of immunization of children of school age, and adds that it is of the opinion, therefore, that it is not advisable at present that toxin-antitoxin treatment in connection with the prevention of diphtheria should be adopted as part of the council's scheme of medical treatment of school children.

Research Work in India

The annual report for 1924 of the Calcutta School of Tropical Medicine Institute of Hygiene, and Carmichael Hospital for Tropical Diseases, is now available. Lieut. Col. J. W. D. Megaw, the director of the school, writes that the supply of European research workers for India is falling off. The best young men from the British schools are no longer attracted, and he suggests that young Indians should be trained to take an increasing share of the work. But the family of the young Indian opposes a career offering little prospect of financial success. The cooperation of European and Indian investigators, of the state, of organized bodies and of individual philanthropists, was a feature of the scheme drawn up for the school about fifteen years ago by Sir Leonard Rogers and definitely put into operation in 1920. The Indian Tea Association supports researches into kala-azar. The Indian Jute Mills Association provides grants for the hookworm department, which also investigates other helminthic infections. The Indian Mining Association assists the department devoted to research in intestinal diseases, for cholera is prevalent in the Jheria coal fields, in both the epidemic and the sporadic form. The inquiry into the incidence of leprosy is financed by the Indian Research Fund Association. Dr. E. Muir continues the important work begun in Calcutta by Sir Leonard Rogers, and both have collaborated in the preparation of a book giving the latest results of leprosy research. Dr. Muir reports that the results show that "leprosy can without difficulty be diagnosed at an early stage in the majority of cases, and when diagnosed and thoroughly treated at such a stage it can be checked and all active signs got rid of, patients remaining free from the disease for the rest of their lives, provided they are able to maintain the resistance of the body and to remain free from all diseases that predispose to leprosy. As such early cases are practically not infectious, their early treatment would diminish the chance of a new generation of lepers." A department of the school is devoted to diabetes, which is distressingly prevalent among the educated classes in India. Researches show that physical exercise plays a very important part both in preventing the disease and in the treatment. A new branch of work is the Pasteur Institute, which was opened at the end of May, 1924, and received in the seven months to the end of the year nearly 1,500 patients, more than one fourth of whom were bitten by jackals. Colonel Megaw is able to confirm the opinion he has entertained for some years that there is a typhus-like fever in certain parts of India which is conveyed to man by ticks from some animal of the jungle. The fever closely resembles the spotted fever of the Rocky Mountains and may be identical with it. A view put forward by Colonel Megaw some years ago, and confirmed by further researches, is now accepted; namely, that the overfeeding of infants with sweetmeats and carbohydrates may be an important factor in the prevalence of infantile cirrhosis of the liver. Certain investigations would indicate that "epidemic dropsy," which is closely related to beriberi, is due to the eating of fermented rice. Colonel Megaw holds that immunity against epidemic dropsy cannot be assured unless the preparation and storage of rice (the staple food of the people of Bengal) is placed on a satisfactory basis.

BELGIUM

(From Our Regular Correspondent)

July 15, 1925.

Yaws or Syphilis

Before the Société belge de dermatologie et de syphiligraphie, Drs. Broden and Bernard discussed recently a case presenting juxta-articular nodes near the elbow. While very frequent in the natives, these nodes are exceedingly rare in white persons. The present case is about the tenth reported in the literature. Various affections may play a part in the etiology of this syndrome, syphilis and yaws being the most frequent. The theory that syphilis is the sole cause cannot be sustained, for it seems evident that yaws must frequently be incriminated. Also Broden and Bernard oppose the idea of an exclusive syphilitic origin, which has recently been again advanced. While the two isolated and independent European cases of De Quervain and Gougerot make it possible to affirm that in Europe, at least, there is no other possible cause than syphilis, it must be admitted that when natives or Europeans who have lived in the colonies are concerned it can no longer be affirmed.

Yaws or syphilis? The similarity in the spirochetes, the identical seroreaction for the two diseases, and the disappearance of the symptoms following the administration of iodids, arsphenamins and bismuth render a differential diagnosis almost impossible.

The Activities of a Physician in the Large Coal Mines

The Académie royale de médecine has awarded the Melsens prize to Dr. Stassen for his recently published work on the activities of a physician in a large modern coal mine. His work contains chapters on the prevention of industrial accidents, the physiologic conditions of work in mines, the prevention of ancylostomiasis, fatigue and overtaxing of the eyes (nystagmus of miners), furunculosis and inflamed hygromas, affections of the respiratory tract, and the general organization in coal mines of medical services and services of industrial hygiene. Through the collection and interpretation of statistics it was possible to interest the management of the mines in the part that medicine could play in economic administration.

The Branch of the Red Cross on the Congo

The first medical aid station for the natives has been established at Pawa in Ituri, by the Red Cross of the Congo. Pawa is located 2,000 kilometers (more than 1,200 miles) from Leopoldville, the distance being traversed by river, automobile or caravan. The station consists of a small hospital, a dispensary, a laboratory and a supply of the most needed drugs. Pawa was chosen for the first station of the Red Cross of the Congo because it is located in a region (Nepoko) in which the population is particularly dense and in which there is no other medical service, notwithstanding the fact that leprosy, yaws and syphilis are widely prevalent.

A second station will soon be organized at Bambili (in lower Uele), at the joint expense of the Red Cross of the Congo and the Compagnie cotonnière congolaise. The region about Bambili contains a large native population, and medical activities will be carried out here for the benefit of the blacks, who are already used to contact with Europeans; that is to say, under entirely different physiologic conditions than prevail in the vicinity of the station at Pawa. The annual budget of each of these two medical stations is 300,000 francs, and its range of activity and influence is approximately 40,000 square kilometers.

Postoperative Tetanus

Before the Société clinique des hôpitaux de Bruxelles, Drs. Renoirdre and Lefèvre de Arric recently presented a case of tetanus that developed the tenth day following a cholecystectomy. During the intervention, a slight loosening of a ligature caused a small quantity of bile to contaminate the operative field. The tetanus was cured by means of an antitetanic serum administered internally. The writers think it was a case of tetanus of probably intestinal origin, the operative wound having been contaminated by the contents of the biliary tract. In this connection, Gratia has reported that, according to researches carried out in Peking, *Bacillus tetani* is frequently found in the intestinal contents and in the bile of Chinese operated on. In fact, at the Peking Hospital it has become a routine practice to inject antitetanic serum before performing a laparotomy.

NETHERLANDS

(From Our Regular Correspondent)

July 15, 1925.

Prophylaxis of Scarlet Fever

Drs. Van den Hoeve and Terburgh believe that scarlet fever results solely from infection from the throat of a person with scarlet fever and that all fear of infection from epidermal scales should be abandoned. The period of quarantine, which is usually from forty to fifty days, could be shortened. If the inflammation in the throat had cleared up, patients might be permitted to attend school or to return to commercial and industrial life.

Immunization Against the Plague

Addressing the Netherlandic Association of Tropical Medicine, Dr. Flu recently discussed various immunization measures against the plague and presented the results of his researches on various animals—guinea-pigs, rats, rabbits and monkeys—in which the question of actual immunization was tested by the subsequent injection of virulent plague bacilli or by bringing the experimental animals in contact with a large number of plague-producing fleas under as natural conditions as could be devised. Aside from inoculation, immunity in animals that have survived the plague does not always protect them from a new infection. It seems, therefore, useless to expect to obtain an artificial means of protection against the natural plague that will prove efficacious in 100 per cent. or even in any high percentage of cases. Nevertheless, three consecutive injections of an aqueous extract of virulent plague bacilli will immunize the guinea-pig. The author has succeeded in protecting 63 per cent. of the animals against subsequent infection with very virulent bacilli. The method has not been applied to human beings as yet. One might, however, inoculate some of the persons employed in the cleaning of dwellings, while the remainder served as controls.

Cancer of the Stomach

Before the clinical society of Rotterdam, Dr. Schalij has presented his observations on five cases of cancer of the stomach in patients in the 20-25 age group. Four young men and one young woman were affected. The appearance of cancer in this age group is usually regarded as rare, but it seems that similar cases of neoplasm in young persons are becoming more frequent.

Hygiene in the Schools

At a recent meeting of school physicians, Dr. Idzerda stressed the importance of the notification of infectious diseases by physicians and the observance of quarantine. The attending physician is not the only one who should interest himself in this important question. It is equally the duty of the school authorities and the physicians in charge of school inspection.

Dr. Kroon has studied the question of the instruction in hygiene which should be given to teachers. The assembly of school physicians has decided to use its influence to secure a better organization of this instruction. It is conceded that the instruction in hygiene for the teaching personnel should be given by physicians, and it is also held that physicians should be represented on the examining board. The course would include not only school hygiene but also general hygiene.

The Netherlandic Congress of Natural Sciences and Medicine

DRAINING OF THE ZUIDER ZEE

At the twentieth session of the Nederlandsch Natuur en geneeskundige Congress, held recently in Groningen, Professor Koch presided over the medical section. An especial interest attaches to the address by Mr. Wortmans on the drainage operations in the region of the Zuider Zee. The preliminary work in the immense undertaking of draining this landlocked inlet, formerly a lake, will consist in the construction of a dike, which, it is estimated, will take eight years. It is thought that the complete work will require twenty-five years. The draining of this great inlet of the sea, which is 85 miles long, will add an area of 225,000 hectares (560,000 acres) to the territory of the Netherlands, which is equivalent to about one fourteenth of its present area. The estimated cost of the undertaking is 400 million florins, or approximately 160 million dollars.

SURGICAL TREATMENT OF BRAIN TUMORS

Professor Laméris of Utrecht presented the results of his observations in 300 cases of surgical treatment of brain tumors. The intervention is of an exceedingly grave character. The immediate mortality in tumors of the cerebrum is 40 per cent.; in tumors of the cerebellum, 50 per cent., and of the pontile region, 75 per cent. The high mortality is due not so much to hemorrhage or infection as to the weak resistance of the patients themselves. The author is an advocate of the one-stage operation and of immediate suture without drainage. In a number of cases he favors decompressive trephining.

Professor Winkler of Utrecht discussed psychic disorders and the value of roentgenographic diagnosis in tumors of the brain. He emphasized that roentgenographic diagnosis should be based chiefly on modifications of the bones and the blood vessels and not on the direct visibility of the tumor. With reference to psychic disorders, Winkler states that they are practically always found associated with brain tumors if a diligent search is made. In this connection, it is advisable to study a considerable number of psychoses with an endeavor to discover whether there is not an anatomic equivalent in observed disorders.

DIABETES AND INSULIN

Professor Hijmans van den Bergh of Utrecht does not consider diabetes a disease entity but a multiform affection. Likewise, the treatment should not be identical in all cases; every patient must be carefully observed in order that a suitable regimen may be prescribed. The goal to be reached is not solely to eliminate the glucose from the urine. Hyperglycemia is the main thing to combat, but only within certain limitations, for a certain degree of glycemia seems to provoke the pancreatic internal secretion and that should be the goal of the treatment.

ANTIDIPHTHERITIC IMMUNIZATION

A communication was presented by Mr. Aldershoff of Utrecht on active immunization against diphtheria. About 300 persons die of diphtheria in the Netherlands, annually. The search for carriers has not given convincing results. An endeavor should also be made to discover a method that will protect children against contagion. Behring's toxin-antitoxin mixture, in the form of intracutaneous injections, has been used by Deventer. Of 4,000 children vaccinated, only four contracted diphtheria later, whereas, among the 2,000 controls, twenty-eight cases developed. The author thinks, however, that Behring's intracutaneous method is too difficult to be employed on a large scale. He prefers the subcutaneous route and employs in this method a product similar to the mixture recommended in the United States. He prepared it himself at the Rijksserologisch Institut of Utrecht and has designated it "Tau." It differs slightly from the Banzhof vaccine and causes less necrosis than the latter. It is asserted that total immunization is attained after three injections at weekly intervals.

VIENNA

(From Our Regular Correspondent)

July 15, 1925.

Influence of Tumors on Sex Manifestations

In an address delivered by Professor Halban before the Gesellschaft der Aerzte in Vienna, he discussed the influence that tumors of (1) the gonads, (2) the pineal body and (3) the suprarenal cortex exert on the manifestations of sex. Reports of from eighty to 100 such cases have been published. Tumors of the pineal body occur especially in boys and cause sexual precocity; in girls, however, tumors of the first and the third class are more frequent. A systematic study of these cases revealed a group that appeared before puberty; for example, in a girl, aged 2, with an ovarian tumor, the mammae were developed as in a 20-year-old girl and produced colostrum. The child has a hair growth on the external genitalia, and the onset of the menses is imminent. In other girls of this type, heterosexual signs appear: beard formation, masculine hair growth, and a deep rough voice. In a third group, early signs of masculine and feminine development appear side by side. In adults, a modification of sex characteristics may occur; for example, in a woman, aged 30, the menses ceased, a beard began to appear, and the voice became deep and rough. An examination revealed a tumor of the suprarenals or of the ovary. In men, such modifications of sex characteristics are rather rare (Bittorf reports a case of effemination of a man, aged 39, due to a tumor of the suprarenals). There are various attempted explanations for the effects of tumors on sex manifestations. Askanazy of Geneva, Starling of London, and Berblinger of Berlin have pointed out that hormones are formed in the tumor, which cause these changes. It has been maintained that destruction of the pineal body in itself induces sexual precocity, but another investigator has reached just the opposite view. In tumors of the suprarenal cortex (only tumors of the cortex and not tumors of the suprarenal gland proper are to be considered as exerting a causal action), not only isosexual but also heterosexual precocity occurs (also mixed manifestations). The theories that would explain this disturbance of function are, however, as uncertain as those just cited. Also tumors of the gonads cause changes in sex manifestations, which are conceived of as influencing secondary characters. Halban holds, however, that hormonal theories, and likewise the theories of the followers of Herbst, according to which all human beings have a bisexual anlage, do not furnish an adequate explanation of these processes. He believes that the tumors exert a "hyperprotective" influence; that is to say, they bring about the development of an already existing anlage which cannot develop under the influence of the normal hormones. Therefore, such pathologic phenomena commonly recede when the tumor is removed. The "hyperprotective" action of the tumors extends rather to the isosexual than to the heterosexual characters. In persons with hermaphroditic tendencies, heterosexual or isosexual changes are more likely to occur than in isosexual individuals. The histologic examination of such tumors shows them to be, in part, malignant and, in part, benign growths; that is, merely hypertrophies. When (as in sarcomas) changes in sex manifestations are noted and no epithelium is present, we can assume only a function of the tumor, which causes the hypersecretion of the organ. Nor can we be sure that such changes are brought about by the destruction of the gonads by tumors, since following castration the appearance of heterosexual characters in man has never been observed. It is known, however, that the suprarenals influence the development of sexual characters. Their hypertrophy causes an overdevelopment and their destruction an underdevelopment. It has also been noted that hermaphrodites have an increased disposition to tumors of the suprarenals. Further careful researches on cases that come under this head will be needed before a final judgment on these complicated conditions can be pronounced.

Fifteen Hundred Cases of Cancer in Which the Wertheim *Operation Was Employed*

At the last meeting of the Gesellschaft der Aerzte of Vienna, Professor Dr. Weibel set forth the results secured to date with the radical operation for cancer of the uterus by the Wertheim method, which was first introduced twenty-five years ago. Under his supervision, 1,500 women have been operated on by this method, and in more than 1,000 of these cases the after-control extended over more than five years. Wertheim's method, including removal of the uterus and of the parametrium, free dissection of the ureter and extirpation of the glands, was carried out in all its details. Table 1 gives a survey of the permanent cures accomplished. The cases are distinguished as incipient, mild, severe and very severe.

TABLE 1.—*Results in Fifteen Hundred Wertheim Operations for Cancer of the Uterus*

	Incipient Cases	Mild Cases	Severe Cases	Very Severe Cases
Percentage of permanent cures among the total operated on	87	53	28	14
Percentage of cures among those surviving the operation	98	61	34	19

A cure was effected in nearly all incipient cases, in more than half of the mild cases, and in almost a fifth of the severest cases. Unfortunately, only 6.5 per cent. of the cases were incipient, and only 42 per cent. were mild. Only 51 per cent. of the cases were operable, the percentage ranging from 40 to 65 in the various age groups. The final results are conditioned to a great extent by the peculiar malignancy of the cases of carcinoma of the cervix of the uterus and by the danger involved in the radical operation. The primary operative mortality was steadily reduced; for the first 1,000 cases it fell from 42, to 16 per cent.; and for the next 500 cases it dropped to 8 per cent.; in the incipient cases it is now only 3 per cent. Almost half of the primary fatal results arose from infection; 10 per cent. from cardiac insufficiency and urologic complications; 8 per cent. from loss of blood, and 4 per cent. from pneumonia. The primary operative mortality rises with the severity of the case and the extent of the infection, as will be seen from Table 2.

TABLE 2.—*Primary Operative Mortality Classified According to the Degree of Severity*

	Per Cent.
Incipient cases	11
Mild cases	13
Severe cases	18
Very severe cases	26

Among the first thousand patients, 22 per cent. presented cancerous lymphatic glands at the time of the operation. In only nineteen of these cases was a cure extending over five years effected. In only 2 per cent. of all cases was it necessary to perform resection of the ureter; in the other cases a free dissection of the ureter, which is seldom affected by carcinoma, sufficed. In the 1,500 cases, resection of the rectum was resorted to in only two instances. In 3 per cent. of the cases there arose cystovaginal fistulas; in 6 per cent., ureteral fistulas developed, nearly all of which, however, healed later, and in 1 per cent. a bladder resection had to be performed. Of the recurrences, 80 per cent. originated in the regional lymyphatic glands, while 20 per cent. were of local origin, 44 per cent. developed within one year after the operation; 26 per cent. within two years; 14 per cent. within three years; 10 per cent. within four years, and 5.5 per cent. within five years. Recurrences were noted also after five years, and even after ten years, but were exceedingly rare. The statistics show that cancer of the cervix in young married women has no worse prognosis than formerly, the war having exerted no demonstrable influence. Of the 1,500 patients, 1 per cent. were pregnant, all of whom were locally operable. The absolute value of the Wertheim operation is shown in Table 3.

TABLE 3.—*Results in the First Thousand Wertheim Operations*

	Cases	Percentage of Those Operated on	Percentage Surviving the Operation
Permanent cures	1-250	42	57
Permanent cures	1-450	42.5	53.3
Permanent cures	1-1,000	42	48

The value of the abdominal radical operation for carcinoma of the cervix is now definitely established. No marked improvement in the percentage of cures can be expected. The primary operative mortality, however, may be further reduced. The most important thing is the early diagnosis, since only the incipient cases are nearly all cured. During the discussion that followed the address, the possibilities of the Wertheim operation were recognized, but many surgeons expressed a preference for the vaginal method, which, carried out under local anesthesia, produces just as good results, while the operative mortality is lower.

PRAGUE

(From Our Regular Correspondent)

July 6, 1925.

Exhibit of Public Health Activities

A public health exhibit held in Hradec Kralove, Bohemia, from May 31 to July 6, demonstrates the progress in public health in Czechoslovakia since the creation of the independent state in the provincial counties. Hradec Kralove is a flourishing city in northeastern Bohemia and has worked out a model organization of public health services including both official and nonofficial agencies. The exhibit concerns prenatal care, infant welfare, school hygiene, the campaign against venereal diseases and tuberculosis, the campaign against trachoma, the alcohol problem, dental care, physical education, hospitals, watering places, sanitation, nutrition, the campaign against cancer, life extension, prevention of accidents, first aid and rural hygiene. During the exhibit, the various associations in the county are holding their annual meetings. It is planned to hold similar exhibits yearly, in some progressive provincial city.

Meetings at Bratislava and Liberec

The annual meeting of the Central Union of Czechoslovak Physicians was held, June 28-29, in Bratislava. Since the creation of its medical school, Bratislava has developed into an important center for medical education both undergraduate and graduate. Unlike the medical schools in Prague and Brno, the Bratislava school is not handicapped in its teaching by crowds of foreign students. The teaching staff of the medical school, which was recruited from the younger generation of scientific workers at the Prague medical school and some of the larger country hospitals, has become the center of many new endeavors in scientific medicine. The *Bratislava Medical Journal* was founded as the official organ of the Bratislava Medical Faculty and is a monthly periodical edited by the Society of Czechoslovak Physicians in Bratislava. The regular weekly meetings of this society bring the members of the teaching staff of the faculty in touch with the practitioner. In each number of the *Journal,* summaries of the original articles appear in French and English. At the occasion of the meeting mentioned above, the *Journal* issued a special number in which progress in medicine and public health in Slovakia is summarized. Account is given of the development of public hospitals in Slovakia, which is the most striking feature of the progress. The general hospital in Kosice should be named first, which was developed into an up-to-date institution with 800 beds. All the counties in Slovakia are now equipped with public hospitals, which gradually are being developed to contain special departments for all branches of medicine. The special number of the *Journal* describes the improvements in the watering places which are so numerous on the southern slope of the High Tatras. Above all, the work for the improvement of public sanitation and the campaign against infectious diseases carried out by the public health service with the most modern methods deserve recognition. Bratislava was therefore chosen as the meeting place of the union. The introductory address was presented by Dr. J. Kostlivy, professor of surgery at the Bratislava Medical School. He expressed the willingness on the part of the medical profession to cooperate further in the improvement of public health conditions in Slovakia but did not hide the fears and anxieties with which the medical profession regards the progressing restriction of private practice. He declared the free choice of physicians in the scheme of national sickness insurance to be the only measure that can satisfy both the medical profession and the public. The general meeting of the German Physicians in Czechoslovakia was held in Liberec, where measures for the prevention of disease were advocated in preference to purely curative measures.

Visit of Madame Curie

Mme. Curie, the discoverer of radium, has recently visited Czechoslovakia as the guest of the Czechoslovak government on her return to Paris from her native country, Poland. For the first time she saw the places from which the ore was brought, from which she succeeded finally in isolating radium. She visited, in Prague, the State Institute for the Study of Radium and the clinic of Prof. R. Jedlicka for the study of medical radiology. Accompanied by former pupils from her Paris laboratory, Mme. Curie visited also the watering place Jachymov, where she descended into the mine from which the ore was taken to be shipped to her Paris laboratory. Her chief interest was centered on the presence in the Jachymov ores of ionium, which she is studying at present and from which she expects further advances in the treatment of malignant growths because she anticipates that with ionium it will be possible to develop a more prolonged and moderate treatment than has been possible with radium.

The Army Medical Journal

The *Czechoslovak Army Medical Journal,* a new publication, will be the official organ of the army medical advisory council, which was recently appointed by the ministry of national defense. The *Journal* will appear quarterly and will contain articles from the fields of medicine, veterinary surgery and pharmacy as far as they concern special needs of the army. The publication of this periodical is the culmination of the efforts of army surgeons who have long felt the need of an independent periodical. The editor of the *Journal* is General Franz, a phthisiologist.

Vital Statistics

The state statistical bureau has recently issued the statistical manual of the Czechoslovak Republic. The first manual was published five years ago, shortly after the creation of the independent state of Czechoslovakia. Comparison of these two volumes shows remarkable progress in this field of public service. The collection of vital statistics is of especial interest to the medical profession. The publications of the state statistical bureau are summarized and statistical investigations carried out by other bureaus and private individuals are abstracted and accompanied by detailed bibliographies. The section of vital statistics in the state statistical bureau is in the hands of Dr. J. Netusil, who studied in the United States. The statistical bureau is adopting modern methods of collecting data, has introduced individual death certificates with the international classification of causes of deaths, and is planning to take the registration from the hands of the churches and introduce the institution of lay registrars.

BERLIN

(From Our Regular Correspondent)

July 15, 1925.

"Dysoxidative Carbonuria"

At the last meeting of the Society of Internal Medicine, Professor Bickel and Dr. Kauffmann-Cosla (Bucharest) reported investigations that they have been undertaking to establish a new disease entity: dysoxidative carbonuria. They have found that in diabetes, aside from the carbon contained in sugar and in fat derivatives (ketone bodies), frequently large quantities of other carbon compounds resulting from sugar metabolism are found in the urine. This carbon, which is more oxidized than carbohydrate but less so than carbon dioxid, can be made to disappear by the injection of proper quantities of insulin, just as sugar may be. The same thing was found to be true with reference to urinary carbons in avitaminoses.

After the foregoing points had been established, Bickel and Kauffmann-Cosla examined other patients with a view to finding evidence of insufficiently oxidized carbon compounds in the urine and found them in a number of instances, which were associated with a marked feeling of illness, loss of weight in spite of a hearty appetite, but no other pathologic findings—not even sugar in the urine. This observation would seem to explain the cases of diabetes in which, following the injection of insulin, the sugar disappears from the urine, while the feeling of illness remains. In such cases, in the opinion of the investigators, insulin treatment should be continued until also these carbon compounds have disappeared from the urine.

The new method of research will doubtless be used, for the time being, only in the larger institutes. The two investigators are endeavoring, however, to discover a simpler method that will enable any practitioner to make a diagnosis. It can be assumed with certainty that, within a short time, the statements of Bickel and Kauffmann-Cosla will be inquired into in most hospitals. If they are confirmed, it may be assumed that they will furnish the starting point for the elucidation of many hitherto obscure disease conditions. If dysoxidative carbonuria is of frequent occurrence, that would throw light on many things connected with constitution and disposition. If the carbon present in the food is not adequately utilized, a person, in spite of a large amount of food ingested, may be hungry and may show less resistance to tuberculosis and other infectious diseases, as was seen, during the food scarcity of the war, in thousands of instances.

Marriages

James F. Hall, Lieutenant Colonel, Medical Corps, U. S. Army, Fort Humphreys, Va., to Mrs. Guy T. Scott of Washington, D. C., recently.

Martin F. Sloan to Miss Julia Alice Willms, both of Baltimore, at Washington, D. C., June 16.

Ernest Charles Burhans, Lansing, Mich., to Miss Lucinda Monroe of Portland, June 16.

John Preston Sutherland to Miss Catherine Grovenia Stewart, both of Boston, in June.

Alan F. Guttmacher, Baltimore, to Miss Leonore Faith Gidding of New York, July 29.

Howard M. Wheeler, Helena, Okla., to Miss Ethel McCune of Kansas City, Mo., July 2.

Ralph W. Haywood, Salem, Mass., to Miss Margaret Knight of Holyoke, June 27.

Dimiter George Fournad to Miss Selma Viola Bredenberg, both of New York, July 22.

Oliver P. Henry to Mrs. Mary Hall, both of Mount Sterling, Ky., at Paris, June 6.

Charles James Roach to Miss Dorothy Sutton, both of Zanesville, Ohio, July 16.

Irving Claman to Miss Leoni Camille Neuman, both of New York, July 19.

Augustus S. Warner to Miss Anna May Haury, both of Chicago, June 30.

John Russell Baum to Miss Daisy Chisnhall, both of Chicago, April 5.

Isaac Cohn to Miss Anna Stein, both of Brooklyn, July 20.

Deaths

Vernon Kenneth Graham ⊕ Kansas City, Mo.; Bennett Medical College, Chicago, 1914; member of the Iowa State Medical Society; formerly tuberculosis examiner and specialist for the U. S. veterans' bureau, St. Louis; aged 36; ied, July 16, at the U. S. Veterans' Hospital, No. 67, of eart disease and tuberculosis of the spine.

Stuart T. Dromgold, Elmore, Ohio; Physio-Medical Instiute, Cincinnati, 1877; member of the Ohio State Medical Association; president of the Ottawa County Medical Society; for twenty-five years member of the board of education; aged 73; died, July 15, of cerebral hemorrhage.

Lawrence Howard Roblee ⊕ Chicago; University of Michigan Homeopathic Medical School, Ann Arbor, 1912; served in the M. C., U. S. Army, during the World War; consulting urologist to the Illinois Masonic Hospital, where he died, July 24, of chronic interstitial nephritis, aged 37.

Leonard Edwin Hanson ⊕ Wallace, Idaho; University of Pennsylvania School of Medicine, Philadelphia, 1908; president of the Shoshone County Medical Society; medical director of the Wallace Hospital; aged 46; died, July 15, at the Deaconess Hospital, Spokane, of nephritis.

Louis Theophile Donaldson ⊕ Reserve, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1879; past president of St. Charles-St. John Parish Medical Society; formerly health officer and president of the parish board of health; aged 71; died, July 15.

Norman Davis Smith ⊕ Swarthmore, Pa.; Medico-Chirurgical College of Philadelphia, 1909; served in the M. C., U. S. Army, during the World War; on the staff of the Taylor Hospital, Ridley Park; aged 43; died suddenly, July 22, of heart disease.

Zeno Leonidas Weaver, Williamsport, Md.; Medical College of Virginia, Richmond, 1900; member of the Medical and Chirurgical Faculty of Maryland; aged 49; died, July 19, at the Washington County Hospital, Hagerstown, of appendiceal abscess.

Benedict Einarson ⊕ Chicago; University of Michigan Homeopathic Medical School, Ann Arbor, 1882; College of Physicians and Surgeons, Chicago, 1890; on the staff of the Englewood Hospital; aged 70; died, July 25, of cerebral hemorrhage.

James Buchanan Stoner ⊕ New York; Jefferson Medical College of Philadelphia, 1885; a retired surgeon of the U. S. Public Health Service; aged 64; died, July 22, at U. S. Marine Hospital, No. 21, Stapleton, Staten Island, N. Y.

Arthur Thompson Browne, Winston-Salem, N. C.; Memphis (Tenn.) Hospital Medical College, 1913; member of the Medical Society of the State of North Carolina; aged 38; died suddenly, July 18, of septicemia and endocarditis.

Charles L. Weeks, New York; Bellevue Hospital Medical College, New York, 1891; visiting physician to St. Vincent's Hospital, and for twenty years on the staff of St. Joseph's Home for the Aged, where he died, July 22, aged 55.

James Mortimer Clark, Chung King, China; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1920; served as a missionary of the Canadian Methodist Church in China; aged 35; died recently, of typhus fever.

Charles T. White, Tonkawa, Okla.; Missouri Medical College, St. Louis, 1899; member of the Oklahoma State Medical Association; aged 69; died, July 20, at the Wesley Hospital, Wichita, Kan., of nephritis, following neuritis.

Harry Yohe Horn, Coplay, Pa.; Jefferson Medical College of Philadelphia, 1879; also a druggist; formerly on the staffs of the Allentown and Sacred Heart hospitals; aged 66; died suddenly, July 17, of cerebral thrombosis.

Solomon Horace Kempner ⊕ New York; Bellevue Hospital Medical College, New York, 1886; aged 62; died, July 8, at the Moses Ludington Hospital, Ticonderoga, of injuries received in an automobile accident.

Harry C. Harkness, Mansfield, Pa.; Chicago Homeopathic Medical College, 1896; member of the Medical Society of the State of Pennsylvania; aged 54; died, July 17, at Philadelphia, of heart disease.

Allen B. Wheelis, Los Angeles, Texas; University of Nashville (Tenn.) Medical Department, 1908; served in the M. C., U. S. Army, during the World War; aged 41; died, July 19, following a long illness.

William R. Lowman, Orangeburg, S. C.; College of Physicians and Surgeons, Baltimore, 1888; member of the South Carolina Medical Association; aged 58; died, July 15, following a long illness.

Claude Melvin Pearce ⊕ Portland, Ore.; Jefferson Medical College of Philadelphia, 1899; member of the Pacific Coast Oto-Ophthalmological Society; aged 48; died, June 24, of interstitial nephritis.

John Bloomfield, Napoleon, Ohio; Medical College of Ohio, Cincinnati, 1879; Civil War veteran; for six years member of the county board of health; aged 83; died, July 12, following a long illness.

Christopher Allen Sanborn ⊕ Redlands, Calif.; Bellevue Hospital Medical College, New York, 1882; member of the New Hampshire Medical Society; aged 70; died, July 18, of heart disease.

Gilbert Haven Hodgson, Tampa, Fla.; St. Louis University School of Medicine, 1911; served in the M. C., U. S. Army, during the World War; aged 37; died, July 22, at Asheville, N. C.

Aaron F. Markwith, Greenville, Ohio; Medical College of Ohio, Cincinnati, 1886; formerly city health officer; for nine years member of the board of education; aged 65; died, July 18, of asthma.

John A. Blackmon, Jackson, Tenn.; Vanderbilt University Medical Department, Nashville, 1882; member of the Tennessee State Medical Association; aged 66; died, July 17, at Memphis.

George Stewart Strathy, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1905; member of the American College of Physicians; aged 42; died, June 11, of pericarditis.

Bruce Colbert Wallace, Athens, Texas; Kentucky School of Medicine, Louisville, 1893; member of the State Medical Association of Texas; aged 56; died, April 3, of edema of the lungs.

Charles William B. Harbour, Tiffin, Ohio; Miami Medical College, Cincinnati, 1885; aged 62; died, July 20, at the Grant Hospital, Columbus, following an operation on the gallbladder.

Wesley Alfred Koch, Pekin, Ill.; College of Physicians and Surgeons, Chicago, 1901; Spanish-American War veteran; aged 48; died, July 22, at the Peoria (Ill.) State Hospital.

Jennie Belle Rozell ⊕ Fairbury, Neb.; University of Nebraska College of Medicine, Omaha, 1924; aged 35; died, July 22, at the Lincoln General Hospital, of septicemia.

Auguste Joseph Pareti, St. Louis; St. Louis University School of Medicine, 1918; aged 35; died, June 30, at New Orleans, of chronic interstitial nephritis and uremia.

Archibald Herbert Babcock, Randolph, N. Y.; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; aged 70; died, June 25, of cerebral arteriosclerosis.

John W. Baker, Batavia, N. Y.; Pulte Medical College, Cincinnati, 1887; for six years city health officer of Batavia; aged 62; died suddenly, July 24, of heart disease.

Sidney Johnston Vann, Westbourne, Tenn.; University of Georgia Medical Department, Augusta, 1900; served during the World War; aged 50; died suddenly, July 13.

Fred Hamilton Powell, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1885; L.R.C.P., London, 1886; died suddenly, May 4.

Ernest Henry Carpenter, Helena, Mo.; St. Louis University School of Medicine, 1903; aged 46; was killed, July 11, when an acetylene plant exploded.

G. L. Kennedy, Roseville, Ohio; Medical College of Ohio, Cincinnati, 1876; member of the Ohio State Medical Association; aged 77; died, July 16.

Isabelle Marie Gage, Kalamazoo, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1902; aged 59; died, July 18, of heart disease.

Oscar N. Gibson, Eldorado, Ill.; Miami Medical College, Cincinnati, 1887; aged 65; died suddenly, July 6, at Galatia, of cerebral hemorrhage.

Louis Boyd Allen, Mount Pleasant, Iowa; College of Physicians and Surgeons, Keokuk, 1880; aged 67; died, July 18, following an operation.

Thomas Jefferson Andre ⊕ Schaller, Iowa; Rush Medical College, Chicago, 1882; aged 68; died suddenly, July 1, of angina pectoris.

James A. McIntosh, Chippawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1903; aged 46; died, May 12.

John William Gannon, Reserve Mines, Nova Scotia, Canada; McGill University Faculty of Medicine, 1918; aged 35; died, June 6.

Mugurdich C. Gabrielian, Philadelphia; Jefferson Medical College of Philadelphia, 1892; aged 68; died, July 7, of heart disease.

Charles Arthur Caplinger ⊕ Wallace, Ind. (licensed, Indiana, 1902); aged 64; died suddenly, July 2, of heart disease.

Robert Emmett Clancy, Cairo, Ill.; University of Louisville (Ky.) School of Medicine, 1891; aged 56; died suddenly, July 22.

Austin M. Frame, Coolville, Ohio; Central College of Physicians and Surgeons, Indianapolis, 1880; aged 69; died, July 8.

Henry L. Rugely, Bay City, Texas; Jefferson Medical College of Philadelphia, 1861; Civil War veteran; aged 87; died, May 6.

Joseph E. Pope, Sageeyah, Okla.; Detroit College of Medicine and Surgery, 1887; aged 65; died, June 29, of nephritis.

David Bevan, Philadelphia; Jefferson Medical College of Philadelphia, 1891; aged 50; died, June 29, of heart disease.

Marcus V. Pool, Buckville, Ark.; Atlanta, Ga., Medical College, 1879; aged 67; died, July 9, of chronic nephritis.

James M. Norris, Butler, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1864; aged 83; died, July 2.

Mary Josie Tenny, Oskaloosa, Iowa; College of Physicians and Surgeons, Keokuk, 1876; aged 84; died, June 2.

Henry S. Skinner, Sapulpa, Okla.; College of Physicians and Surgeons, Chicago, 1883; aged 63; died recently.

John Wesley King, Bradford, Pa.; Jefferson Medical College of Philadelphia, 1889; aged 58; died, June 28.

Charles Willis Henry, Coon Rapids, Iowa; Rush Medical College, Chicago, 1884; aged 70; died, May 10.

William Allen Barr, Paris, Ill.; Rush Medical College, Chicago, 1892; aged 67; died, July 18.

William A. Synon, Platteville, Wis.; Rush Medical College, Chicago, 1882; aged 69; died, July 14.

Philip D. B. Gratton, Galatia, Ill. (licensed, Illinois, 1877); died, July 6.

Correspondence

IVY POISONING: ITS TREATMENT AND PREVENTION

To the Editor:—Krause and Weidman, in their paper (The Journal, June 27, p. 1996) on the preventive treatment of ivy poisoning, state that Schamberg introduced the method involving the introduction of tincture of *Rhus toxicodendron* by mouth in 1919.

The use of products from the poison ivy group of plants as remedies to *Rhus* dermatitis has a history similar to the general history of isopathy. However, as these poisonous *Rhus* plants are native to North America and Asia only, the beginnings of the use of isopathic remedies in this instance is to be looked for in these countries and not in Europe.

A review of the literature shows that, in the treatment of *Rhus* dermatitis, *Rhus* charcoal and *Rhus* ashes have been used externally; and *Rhus* infusions and *Rhus* tinctures have been used internally; and *Rhus* tinctures have been used hypodermically. There are also instances of *Rhus* poisoning from internal administration or accidental consumption.

In 1748, Kalm said of poison sumac (*Rhus vernix* L.), "Some people assured me that a person suffering from its noisome exhalations would easily recover by spreading a mixture of the wood burnt to charcoal, and hog's lard, upon the swelled parts."

In 1798, Horsfield stated that ashes of the leaves and wood of the poisonous *Rhus* were used as topical applications in *Rhus* dermatitis.

A quotation from Dakin in 1829 is interesting: "Some good meaning, mystical, marvelous physicians, or favored ladies with knowledge inherent, say that the bane will prove the best antidote and hence advise the forbidden leaves to be eaten, both as a preventive and cure to the external disease. I have known the experiment tried, which resulted in an eruption, swelling, redness and intolerable itching around the verge of the anus" (confirmed by Krause and Weidman).

The observations of homeopaths, extending over a hundred years, show that an excessive amount of *Rhus* poison when taken by mouth will cause irritation of the alimentary tract and does not prove any remarkable cures.

Schamberg, in 1916, announced that he had been able to protect persons susceptible to attacks of ivy poison by the internal administration of minute but increasing doses of the tincture of *Rhus toxicodendron.*

In 1918, Strickler advocated the treatment of severe cases of *Rhus* dermatitis by intramuscular injection of an alcoholic solution of *Rhus* poison.

Subsequent papers dealing with the use of the Schamberg and Strickler methods give case histories which do not necessarily prove that relief was secured, nor recovery hastened, nor immunity obtained through the use of the *Rhus* tincture. It has not been proved that the results observed might not have been obtained without such treatment. During treatment, new eruptions occurred on various places on the body remote from those originally affected when treatment commenced. It is doubtful, therefore, whether the treatment described proved either preventive or curative.

Of a total of seventy-six bed patients who received nothing but local treatment with calamine lotion at the University of California, ten patients, or 13 per cent., were discharged as cured after two days; twenty-five, or 33 per cent., were discharged as cured after three days; sixteen, or 21 per cent., were discharged as cured after four days; nine, or 12 per cent., were discharged as cured after five days; twelve, or 16 per cent., were discharged as cured after seven days, and no patient stayed as long as eight days without being discharged as cured. This shows that nearly one half (46 per cent.) of the seventy-six patients were discharged as cured after three days' confinement. The results from the use of the Strickler and Schamberg treatments as published do not indicate that any less time elapsed between inception and recovery.

A study of the Strickler and Schamberg treatments should be more scientifically conducted, should include temperature, respiration, size and location of involved areas, measurements of swelling, blood pressure records, differential and total blood counts, and blood and urine chemical analyses, as well as definite control.

Definite quantities of the poison should be used. A "95 per cent. alcoholic preparation" of unknown poison content is too indefinite.

In testing for a decrease in susceptibility to *Rhus* poison obtained by the treatment, minimal toxic doses should be determined before and after treatment. This was not done by Krause and Weidman.

Neither the supposition that immunity to *Rhus* dermatitis may be inherited, nor the variation in the degree of susceptibility with age or regardless of age, proves that immunity may be acquired through the use of hypodermic injection of *Rhus* poison. The possibility of successive severe attacks of *Rhus* dermatitis during one season argues against the acquisition of immunity in this manner. It seems scarcely proper to speak of *Rhus toxicodendron* antigen until there is reason to believe that antibodies are formed as a result of the introduction of the poison, especially when these cannot be expected in view of the non-nitrogenous composition of the irritant.

Krause and Weidman report as a new finding that "local immunity is not developed by repeated attacks of ivy poisoning." This has been long known (McNair: Rhus Dermatitis, p. 145). Their report, that "there is no such thing as absolute (and probable permanent) immunity against ivy poisoning," accords with my belief, but was not proved by them, for they employed only the diluted poison as it is found in the sap, or an alcoholic solution of it containing an unknown quantity of poison. They did not try the poison highly concentrated and purified as did Warren in 1909. Their statement, "It appears that all of the commoner laboratory animals are immune to the virus," does not necessarily hold to the application of the highly concentrated and purified poison, nor does it apply to the internal administration of the poison. The relative immunity of rabbits and guinea-pigs to dermatitis from *Rhus* sap had been previously demonstrated by Crane, and of monkeys and rabbits by von Adelung.

The statement in my book, quoted by Krause and Weidman, "that species immunity in lower animals to *Rhus* is frequently due to protection of the skin and hair," was based on circumstantial and direct evidence: the circumstantial evidence of White that hunting dogs which have traversed woods infested with poison ivy are sometimes affected about the eyes; the direct evidence of von Adelung that out of ten rabbits tested with poison on shaved areas on the outer surface of their ears, three developed *Rhus* dermatitis. Of these three rabbits, one had a green leaf applied and observed for two days, and the other two had the "pure toxin" (not an alcoholic extract) applied. The use of the words "dogs" and "rabbits" in this connection is ambiguous, as there are many breeds of dogs and at least thirty species of rabbits in the United States, and their susceptibility may vary. No cases of *Rhus* dermatitis of the human scalp have been observed where the scalp is protected by a thick covering of hair. It is evident from the foregoing observations that hair does serve as a protection.

I doubt whether the fact that a great number of substances have been tried in the topical treatment of *Rhus* dermatitis shows that a substance cannot be found which will have an appreciable remedial value in *Rhus* dermatitis. In fact, I believe a preventive has been found in a substance which will chemically neutralize the poison; namely, ferric chlorid. Ferric chlorid is also a remedy in the incipience of the disease.

Ferric chlorid was sucessfully used by Browning in 1885 without knowledge of its chemical action on the poison. But I have found that this substance chemically neutralizes the poison. (McNair: Rhus Dermatitis, Chapter XVI, following the "seven-page list of vaunted remedies.")

By comparative tests, this substance has been found remedially superior to twenty-nine or more remedies.

In cases of ivy poisoning that actually develop and become acute, the treatment is based on the recognition of the nature of the injury. The effect of ivy poisoning is much like that of a burn, and the treatment suggested resembles that successfully used during the war in burn cases. The affected parts are first bathed with ferric chlorid solution, to neutralize the poison. The skin is dried, and melted paraffin is painted over it. A thin sheet of cotton is laid over the wound, and this also is covered with paraffin. The affected area is thus protected from the air and from rubbing, and new skin is given a chance to grow.

Regarding the paraffin treatment, Dr. Flagg says: "I have found melted wax to form instant relief from pain, burning and itching in old and young. The course of the disease is much shortened. A simple and easy method is to use a small swab of cotton and paint the parts with the melted wax. There is no danger, of course, from burning. With closed eyes the whole face may be painted. The least entrance of air beneath the mask or cast of wax requires sealing in the waxened part. I know from personal experience the instant relief from pain, burning and itching, and the return of sleep, which is not only grateful to the patient, to say nothing of the loss of valuable time and money."

The following references may be consulted:

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Garrison, F. H.: An Introduction to the History of Medicine, Ed. 2, Philadelphia, 1917, p. 449.
Hahnemann, S.: Organ of Homoeopathic Medicine, first American Edition from the fourth German edition, Allentown, Pa., 1836.
Schamberg, J. F., in Discussion on Eczema, The Journal, Jan. 13, 1917, p. 87.
Strickler, Albert: *J. Cutan. Dis.* **36**: 327 (June) 1918.
Sayer, A.: Specific Treatment of Dermatitis Venenata (Rhus Toxicodendron), Preliminary Report, *M. Rec.* **100**: 717 (Oct. 22) 1921.
Crane, W. W. M.; Alderson, H. E., and Pruett, B. H. J.: Poison Oak Dermatitis, *California State M. J.*, May, 1921.
Flagg, D. P.: Treatment of Poison Ivy Dermatitis, The Journal, Aug. 18, 1923, p. 598.

James B. McNair, Chicago.

"GASTRIC JUICE AS A GERMICIDE"

To the Editor:—In The Journal, July 25, page 273, appears an editorial comment discussing how bacteria enter the intestinal tract in spite of the germicidal action of the gastric juice.

Is it not usually assumed that the new-born baby's intestinal tract is sterile, but that within a few hours after birth the tract is well populated with bacteria? At this time of life gastric secretion is small, and the stomach offers no serious obstacle to the passage of bacteria. After lodging in the intestinal tract, where they find excellent food and temperature conditions, it would seem that they had found a permanent location. It is true that the intestinal flora at this time of life is different from the flora of later life, but a variety of types is represented, nevertheless, and as conditions in the intestinal tract change with advancing life, a different type gains pro

It is furthermore stated by leading authorities that gastric juice of high acid concentration is secreted under the stimulus of food; that there are daily periods when the secretion is relatively small and when the acid content is low. During these periods, saliva, teeming with bacteria, is constantly swallowed; water may be taken, and other substances containing bacteria may reach the stomach. Are not the chances in favor of bacterial passage through the stomach into the intestinal tract under such conditions considerable?

If these considerations are true, it would seem that the enormous population of bacteria in the intestinal tract is not difficult to explain.

P. G. Heineman, Chicago.

IRRADIATED FOODS, RADIUM AND PHOSPHORUS

To the Editor:—In The Journal, July 25, appears a communication from Dr. Tomb, suggesting that the acquisition by foods of antirachitic potency as a result of irradiation "is merely a stored-up form of radiant energy," and raising the question of whether "radium emanation or the phosphorescence of phosphorus may not also be antirachitic in action." In this connection I should like to call attention to the fact that in my preliminary communication to the American Pediatric Society, in June, 1924, on the activation of inert vegetable oil, it was reported that animals failed to be protected from rickets by feeding small amounts of radium bromid or by additions of minimal amounts of radium to linseed oil. The details of these experiments may be found in a later publication (*J. Biol. Chem.* 62:301, 1924).

The author further suggests that "the action of phosphorus in rickets is worthy of modern laboratory investigation" and that phosphated oil may be a "universally available substitute for both the mercury vapor lamp and sunlight in the clinical treatment of rickets." Recently we have made careful biologic tests of this kind, and found that phosphorus is of no value in the prevention of rickets. The substitution of phosphorus for either of the specific antirachitic agents—ultraviolet rays or cod liver oil—would be a decided step backward, and is fraught with danger to one of the most promising fields in preventive medicine.

Alfred F. Hess, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PHARYNGOMYCOSIS

To the Editor:—I am asking you for information about a case of pharyngomycosis. The boy is 6 years old, well nourished and developed, and his health is good. He came to see me for white areas on both tonsils. He had received potassium iodid, also thymol internally. Locally, silver nitrate, mercurochrome-220 soluble, thymol in alcohol, thymol and cinnamon oil in alcohol, trichloracetic acid 10 per cent., and chromic acid 10 per cent. had been applied. So far there has been no change after three months' treatment. I shall appreciate very much if you will tell me a cure or what would be best to do.

George A. Griot, M.D., Chadron, Neb.

Answer.—Pharyngomycosis tonsillaris is caused by a fungus or mycelium. This organism penetrates the crypts of the tonsils and is exceedingly hard to dislodge. Even though the little white plugs are pulled out with forceps, they promptly recur. All sorts of caustics and applications such as were tried have been used in many cases but are usually without avail. So far as we are aware, there are only two ways of curing the condition. One of them is to use the electrocautery, heating the platinum point to a dull red heat, and penetrating the various crypts of the tonsils and destroying them. This method, however, is usually unsatisfactory because it cannot be carried out at one sitting, and because one can never be quite certain that all the crypts are actually destroyed. For that reason disappointment is often noted in that the infection recurs. Furthermore, in a child of the age of 6, it would be very difficult indeed to do this, since it is almost impossible to get children to sit sufficiently still for the numerous cauterizations that are needed. The second method, which is the one that usually gives a perfect result, is the complete removal of the tonsils. In some of the cases, however, the white spots may appear on the posterior wall of the pharynx or on the base of the tongue. In those cases, the cautery is suitable. For a tonsillar infection, however, a complete removal of these organs, so far as we know, is the best method for complete and permanent relief.

ROENTGEN RAYS NOT PARALLEL

To the Editor:—Do the roentgen rays become parallel at 6 feet fro the target? I understand that the rays are divergent, and I thoug they traveled in a straight line unless obstructed. Do they becon parallel 6 feet from the target or at any other distance?

J. D. Riley, M.D., El Paso, Texas.

Answer.—Roentgen rays are due to a succession of ind pendent pulsations in the luminiferous ether, starting from t points of impact of the cathode particles on the anticathod These are not continuous vibrations like those of ordina light; they are isolated and extremely short. The rays ca not be concentrated by lenses or deflected by strong magnet At the time Sir George Stokes (1897) proposed his ethe pulse theory, there was considerable disagreement amo physicists as to the actual nature of roentgen rays. Th controversy was stilled by the discovery that they can both refracted and reflected by crystals. Like light, they a transverse and have the same velocity. There is no dou now that roentgen rays are identical in behavior with lig except that the wave lengths are considerably shorter. T roentgen rays behave, therefore, as ordinary light; that the wave trains starting from the point of source will diver continuously and never become parallel at any distance fro that point.

SCANDINAVIAN FOUNDATION

To the Editor:—I am interested in the Scandinavian Foundati through which Americans are entitled to one year's study in the Scan navian countries. Can you inform me about this, or tell me to wh to write concerning it? I naturally am interested in obtaining inforn tion concerning opportunities for medical studies

F. I. Oberg, M.D., Belgrade, Mont.

Answer.—The central office of the American-Scandinavi Foundation is at 25 West Forty-Fifth Street, New Yo The foundation was established in 1911 to improve the int lectual relations between the American and Scandinavi people by means of an exchange of students and lecture publications and a bureau of information. The secretary the board of trustees is James Creese. There were, it appea forty exchange fellowships annually between American a Scandinavian universities between 1919 and 1924. Th fellowships are for study and research in science a humanities. Applications should reach the secretary bef March 15. The fellowship jury to award stipends meets first Saturday in April.

There are other organizations which encourage st abroad, and they are described in the *Educational Reco* published by the American Council on Education, Washingt D. C., April, 1925.

PHOSPHORUS AND MERCURY COMPOUNDS IN FIREWORKS

To the Editor:—A friend of mine writes that in the hospital which he is connected they have had several cases since the 4th whe children have swallowed the substances of different types of firewo In two of these, symptoms of phosphoric poisoning developed; in anot those of mercury. Do fireworks contain these ingredients?

J. P. Crozer Griffith, M.D., Philadelphi

Answer.—About two years ago the division of indust hygiene of the New York State Department of Labor carr out an investigation of the hazards connected with firewo containing phosphorus. It was found that phosphorus (poisonous variety, yellow phosphorus) is used in a red c position that appears on the market under various tr names, such as "Spit-Devils," "Son-of-a-Gun" and "Devils-on-the-Walk." When ground on the sidewalk by the shoe heel, they crack, spit and sputter. The compositions have a strong odor, suggestive of phosphorus or phosphin. C. M. Salls, Ph.D., writes (Menace of Phosphorus Fireworks, Industrial Hygiene Bulletin, New York State Department of Labor, December, 1924) that several times he has noted "the characteristic phosphorus luminescence arising from the poisonous composition held by the chubby hands of a little child." According to the same article:

> Chemical analysis of the red composition shows that it contains several per cent. of yellow phosphorus. The remainder of the composition consists of four comparatively nonpoisonous constituents; namely, potassium chlorate, iron oxid, magnesium carbonate, and gum arabic.
>
> The division has record of seven deaths of little children who have put the composition in the mouth.
>
> It is evident, therefore, that the paper or sand coating and the magnesium carbonate in the composition which are supposed to act as a preventive and an antidote, respectively, are not effective.
>
> In the fireworks factory the workers must handle the composition and inhale the fumes of yellow phosphorus. Three cases of phosphorus poisoning from this source have been reported.
>
> The greatest hazard, however, that is connected with phosphorus fireworks is undoubtedly the danger of ignition and poisoning while in shipment or in storage in a mercantile establishment.

A case of phosphorus poisoning in a child from the ingestion of fireworks was reported by H. J. Dwyer and F. C. Helwig (The Journal, April 25, 1925, p. 1254); a method of treatment is also detailed in this article. A treatment for phosphorus burns (external) is described by D. C. Walton (The Journal, May 23, 1925, p. 1569).

Mercury is also used in some fireworks but to a much less extent than phosphorus. "Pharaoh's serpents" (sometimes spoken of as "snakes in the grass") are at times made with mercuric thiocyanid. The same effect (great coils from the body of the lighted mass and serpentine movements) can be obtained from other substances not containing mercury.

CODEIN HABIT

To the Editor:—I am under the impression that in one of the issues of The Journal of last year the statement was made that Dr. Henry Christian and Dr. Richard Cabot of Boston, as well as some other noted clinicians, had never seen a case of codein habit and denied its occurring. If I am correct in this will you kindly refer me to the article in question, or better still, send me the issue of The Journal wherein the statement occurs? Will you also inform me as to the consensus of opinion of accepted authorities on the danger of habit formation in the use of codein, dionin and pantopon? Of course, I refer to the use of these agents in inoperable surgical conditions, asthmatic and cardiac disturbances, etc., not in neurotic states. Kindly omit my name.

T. S. O., Connecticut.

Answer.—We are unable to find any statement by either Dr. Christian or Dr. Cabot that they have never seen a case of codein habit.

The question of habit formation of codein was discussed in letters to The Journal, published in the issues for May 13, 1922, page 1478, and May 27, 1922, page 1654.

So far as we know, there is not available any statement of opinion by recognized authorities as to the danger of habit formation in the use of codein, dionin and pantopon.

The following statements appear in New and Nonofficial Remedies:

"Codeine (methyl-morphine) is less narcotic, less constipating, and less apt to induce tolerance and habit" (than morphin).

"Ethyl-morphine [dionin] seems to stand intermediate between morphine and codeine, in all respects."

"Pantopon-Roche (pantopium hydrochloricum) produces essentially the effects of opium, but, being devoid of its extractive, it may be used for hypodermic administration."

EFFECTS OF MERCUROCHROME-220 SOLUBLE ON ROENTGENOGRAMS AND ROENTGEN RAY

To the Editor:—Does mercurochrome-220 soluble on the skin bar the use of the roentgen ray? For instance, in a case in which a breast had been amputated for cancer and mercurochrome had been used and the stain is yet present, would one be safe in using the roentgen ray?

U. L. Hurt, M.D., Seymour, Iowa.

Answer.—Information thus far available does not indicate whether or not painting of the skin with mercurochrome prevents or facilitates the penetration of the roentgen ray. Some evidence indicates that the use of mercurochrome in connection with ultraviolet rays does not appreciably modify the results of the latter.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, Sept. 1. Sec., Dr. Harry C. De Vighne, Juneau.

National Board of Medical Examiners: Written examinations in Class A Medical Schools. Parts I and II, Sept. 16-18. All applications must be made on or before August 15. Sec., Dr. John S. Rodman, 1600 Walnut St., Philadelphia.

New Hampshire: Concord, Sept. 10-11. Sec., Dr. Charles Duncan, Concord.

Oklahoma: Oklahoma City, Sept. 8-9. Sec., Dr. James M. Byrum, Shawnee.

Philippine Islands: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

Porto Rico: San Juan, Sept. 1. Sec., Dr. Diego A. Biascoschea, 3 Allen St., San Juan.

Wyoming June Examination

Dr. G. M. Anderson, secretary, Wyoming Board of Medical Examiners, reports the written examination held at Cheyenne, June 8-10, 1925. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 2 candidates examined, one passed and one, an osteopath, failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Jefferson Medical College of Philadelphia		(1923)	85.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Jefferson Medical College of Philadelphia		(1918), (1924)	Utah
University of Pennsylvania		(1923)	Utah

Illinois April Examination

Mr. V. C. Michels, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, April 14-16, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 114 candidates examined, 82 passed, including 2 osteopaths and 5 drugless practitioners, and 32 failed, including 2 osteopaths and 6 drugless practitioners. Seventeen candidates, including 2 osteopaths, were licensed by reciprocity, and 3 candidates were licensed by endorsement of their credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1921)	77
Chicago Medical School		(1922)	78
Loyola University		(1924, 2) 77, ‡ (1925)†	84
Northwestern University		(1924) 77, (1924)†	‡
Rush Medical College		(1925, 32) 78, 80, 81, 81, 82, 83, 83, 83, 83, 84, 84, 84, 85, 85, 85, 85, 85, 86, 86, 86, 87, 87, 87, 87, 87, 87, 87, 88, 89, 89, ‡ (1924) 84, (1924, 14)†, ‡	82
University of Illinois		(1924, 3)†, ‡, (1925)†	80
Indiana University		(1924)	‡
Tulane University		(1923)	85
University of Minnesota Medical School		(1924)	85
St. Louis University		(1923)	75
Washington University		(1925)	‡
University of Buffalo		(1919)	85
University of Oklahoma		(1923)	87
University of Oregon		(1924, 2)	‡
University of Manitoba, Winnipeg		(1925)†	80
German University of Prague, Czechoslovakia		(1921)*	82
University of Berlin, Germany		(1911)* 79, (1921)*	77
University of Erlangen, Germany		(1924)*	76
Univ. of Budapest, Hungary		(1892)* 83, (1919)* 78, (1922)*	79

College	FAILED	Year Grad.	Per Cent.
Georgetown University		(1896)	66
Bennett Medical College		(1914)	74
Chicago Medical School		(1922, 2) 61, 71, (1923, 3) 71 72,	‡
Jenner Medical College		(1917)	71
Loyola University		(1924)†	‡
Eclectic Medical University, Kansas City		(1917)	70
University Medical College of Kansas City		(1911)	70
Meharry Medical College		(1903) 28, (1914) 43, (1923)	69
Univ. of Naples, Italy		(1916)* 40, (1920, 2)* 58, 60, (1921)*	44

University of Cluj, Roumania	(1922)*	69
University of Kharkov, Russia	(1914)* 72, (1915)*	60
University of Odessa, Russia	(1918)*	59
University of St. Vladimira, Russia	(1923)*	74
University of Saratov, Russia	(1916)*	62

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago Homeopathic Medical College	(1903)	Iowa
The General Medical College	(1924)	Wisconsin
Illinois Medical College, Chicago	(1902)	Mississippi
Rush Medical College	(1924)	Wisconsin
Tulane University	(1912)	Alabama
Johns Hopkins University	(1921)	Maryland
Maryland Medical College	(1912)	Penna.
University of Minnesota Medical School	(1905), (1913)	Minnesota
National Univ. of Arts and Sciences Medical Dept.	(1912)	Arkansas
Temple University	(1918)	Penna.
University of Tennessee	(1912) Tennessee, (1915)	Texas
Marquette University	(1915)	Wisconsin
University of Toronto	(1892)	Indiana

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College	(1902)	U. S. Army
Georgetown University	(1914)	U. S. Navy
National Univ. of Arts and Sciences Medical Dept.	(1917)	War Record Exemption

* Graduation not verified by the American Medical Association.

† This candidate has completed his medical course and will receive his M.D. degree on completion of a year's internship in a hospital.

‡ No grade given.

Book Notices

Tumors of the Spinal Cord. The Symptoms of Irritation and Compression of the Spinal Cord and Nerve Roots. Pathology, Symptomatology, Diagnosis and Treatment. By Charles A. Elsberg, M.D., Professor of Neurological Surgery, Columbia University. Cloth. Price, $10. Pp. 421, with 354 illustrations. New York: Paul B. Hoeber, Inc., 1925.

This is a classic contribution to the literature. It deals with the symptoms of irritation and compression of the spinal cord and nerve roots caused by tumors of the spinal cord, and with the pathology, symptomatology, diagnosis and treatment of spinal cord tumors. The work is based on the results of investigations carried out by the author during the last twelve years on 100 verified tumors of the spinal cord on which he personally studied and operated; eighty-one of these cases are given in detail. Special stress is laid on the general medical and neurologic aspects of spinal cord tumors. Often great diagnostic skill is required to differentiate between pain in the chest due to intrathoracic disease and that due to spinal root irritation, to distinguish between symptoms of intra-abdominal disease and root symptoms due to spinal disease, to understand the significance of brachial, intercostal or sciatic neuralgia. This also applied to the differentiation of the symptoms of primary disease of the bladder or prostate gland from the rectal and vesical disturbances accompanying spinal disease. Elsberg points out the great importance of recognizing and differentiating between the progressive symptoms of a neoplasm of the spinal cord and of arthritis of the bony spine, on the one hand, and of primary or secondary malignant disease of the vertebrae, on the other. For the former the surgical results are brilliant, while in malignant diseases surgery is often useless. Contrary to the usual belief, Elsberg feels that at present there is no clear evidence that trauma or infection can cause or stimulate the growth of a cord tumor or that there is a congenital or hereditary factor in its development. Pregnancy and labor have been mentioned by many authors as having preceded the rapid appearance of spinal symptoms In three of his cases, the symptoms either began or became markedly aggravated after confinement. It is probable that there is no predilection for either sex. In his series, there were fifty-seven female and forty-three male patients. The tumors may occur at any age, but are especially likely to occur in adult life. His statistics agree with those generally found in the literature that spinal tumors are infrequent before the twentieth and after the sixtieth year. Eighty-four per cent. of his patients were between 20 and 60.

Four chapters, giving case reports in detail, are magnificently presented. The first three deal with extramedullary tumors, the fourth to cases of intramedullary tumors. Each case report is accompanied by outline drawings of the body on which are indicated the cutaneous distribution of the various spinal nerve segments, shaded to illustrate graphically the sensory disturbances for touch, pain and temperature and the degree of change. Each case report is accompanied by a wash drawing and sketch showing the condition found at operation, a photograph of the tumor removed, and a photomicrograph of a section of the neoplasm. After a chapter on the relation of the tumors to the cord and one on the cerebrospinal fluid, there are three chapters devoted to symptomatology, and then a chapter on the clinical features at different levels of the cord. The remaining chapters deal with pathologic anatomy, multiple tumors, diagnosis and differential diagnosis, treatment and results.

Contrary to the beliefs of the last thirty years, and in direct opposition to experimental and clinical observations made by a number of investigators, Elsberg believes that there is a lamellar arrangement of the fibers in the pyramidal and spinothalamic tracts similar to the arrangement of the long fibers in the posterior column of the cord. He calls attention to the fact that a positive Wassermann reaction should never cause a long delay before surgical intervention is instituted, unless there is a great improvement in the symptoms. If the improvement is not rapid, surgical measures are called for without delay. He emphasizes the importance of paresthesias on the opposite side below the level of the lesion as a symptom of extramedullary tumors on the ventral and lateral aspect of the cord. The more carefully the history of such a patient is taken, the more often will a description of contralateral paresthesias be obtained. Not only is this the case in intradural growths, but it is frequent also in those lying outside the dura. A favorite site for extradural growths is the anterolateral aspect of the dural sac, and the occurrence of contralateral tingling or other paresthesias must make one always think of the possibility of an extradural growth. An unpleasant experience with a subpial tumor taught him that it is never safe or advisable to remove all of a growth if it is too firmly attached to cord tissue. It is well to remember that a patient with a cord tumor may have arthritic changes in the vertebrae which have nothing at all to do with the spinal symptoms. Elsberg has seen only one instance in which definite spinal cord signs were the result of arthritic changes.

Attention is called to the fact that a feeling of coldness in the extremities seems to be a regular complaint in high cervical tumors, and was recorded in every one of his histories of high cord tumors. At one time the author believed that cervical cord tumors should not be removed at one stage, but that, after exposure of the growth, their actual removal should be deferred until pressure conditions within the spinal canal had somewhat readjusted themselves. He now states that this view, if exceptional cases are excluded, was erroneous, and he is firmly convinced that, whenever possible, an operation for an extramedullary spinal tumor should be completed at one sitting. Subjective and objective respiratory disturbances occur in most of the patients with tumors of the uppermost cervical segments. It is surprising that respiratory disturbances are not more often observed in tumors of the level of the fourth cervical segment. Disturbances in the bladder function are a late symptom in the majority of cord tumors, even when they are located in the lumbosacral cord and between the roots of the cauda equina. The author records a few cases in detail in which he suspected that the growth was on the posterior surface of the cord on account of the marked posterior column disturbances, but in which the tumor lay in front of the cord and pushed the cord markedly backward, so as to force the posterior white columns against the dura and the posterior wall of the vertebral canal. The text ends with a tabulation of operative experiences which is very full, covering for each case the age, duration of symptoms, condition of the cord, arches removed, treatment of the tumor, result and duration. This is followed by a bibliography of 288 references, mainly those publications to which reference has been made in the text. To this are added sixteen additional references, including papers read at the 1923 meeting of the French Association of Neurology, at which the main topic was "Spinal Compression." There is an index of authors and an excellent subject index.

Helmholtz's Treatise on Physiological Optics. Translated from the Third German edition. Edited by James P. C. Southall, Professor of Physics in Columbia University. In three volumes. Volume I. Cloth. Price, $7 per volume. Pp. 482, with 150 illustrations. Ithaca: The Optical Society of America, 1924.

Aug. 31, 1821, there was born to a teacher of classical languages in the Potsdam gymnasium, and his wife, a son who was named Hermann Ludwig Ferdinand von Helmholtz. One hundred years later, at a meeting of the Optical Society of America, it was decided to translate the masterpiece of Helmholtz into the English language as a centennial memorial and to render available to a larger number of scientists the greatest thesaurus of physiologic optics ever written. A distinguished member of that highly scientific society was put in charge of the undertaking, and under his leadership and editorship twelve American scientists began the translation of Helmholtz' monumental work. The various volumes of the first German edition appeared in 1856, 1860 and 1866, and the third edition, revised and edited by Gullstrand, Nagel and von Kries, was completed in 1911. The latter edition was chosen for the English translation, and the text was adhered to verbatim. The appendixes, by von Kries and others, were included, and to the first volume was added a chapter on ophthalmoscopy by Gullstrand, with the mathematical and practical principles of modern ophthalmoscopy. The first volume of the translation pertains to the physical phase of the subject; the second will be devoted to the physiologic phase, and the third to the psychologic. No expense has been spared in the preparation of these volumes, and they redound greatly to the printers' credit. All honor is due the editor, Professor Southall, whose untiring energy, thorough understanding of the subject, and keenly analytic mind has made possible the inclusion in all scientific libraries of this work on physiologic optics in the English language.

Pye's Surgical Handicraft. A Manual of Surgical Manipulations, Minor Surgery and Other Matters Connected with the Work of House Surgeons and Surgical Dressers. Edited and Largely Rewritten by W. H. Clayton Greene, C.B.E., B.A., M.B., Surgeon to St. Mary's Hospital. Ninth edition. Cloth. Price, $7. Pp. 619, with 358 illustrations. New York: William Wood & Company, 1924.

This edition has been revised and rewritten to a great extent by Clayton-Greene. The author believes that the surgeon should be a highly skilled handicraftsman, and makes an effort to instruct him concerning certain surgical procedures. It has been his endeavor to consider the surgical conditions throughout their treatment encountered by resident hospital surgeons and interns. The contents include mechanical and chemical methods of arresting hemorrhage, and of taking care of complications following it. The technic of blood transfusion is described fully, from the testing of blood for compatibility and blood grouping. The application of various bandages, splints and plaster casts in the care of emergencies is shown, with illustrations. The treatment of practically all ordinary fractures and dislocations is given from emergency care to follow up observation. Accepted methods are advocated, and there are numerous illustrations to show splints or methods of treatment recommended. This section takes up about one sixth of the volume. Tuberculous bones and joints requiring prolonged mechanical treatment are taken up later, but might better be taken up in the section on the use of splints in fractures. The treatment of abscesses and of wounds due to injury, burns or chronic disease is considered in detail. The control of sepsis by various accepted methods is described. Bier's passive hyperemia treatment, cupping, blisters and numerous other methods are included, though they are rarely used in this country. A study of venereal disease, written by a collaborator, is inserted here without any apparent reason. The discussion of the Wassermann reaction takes up a fourth of the subject matter of this section, and is entirely out of place in a volume of this kind. Drug medication takes up the rest of the chapter. Under minor surgery are grouped such procedures as the evacuation of joints, aspiration of the chest and the bladder, and the use of the bladder catheter and the stomach tube. Retention of urine is considered satisfactorily, including the causes, various forms of treatment, and postoperative care. There is a brief consideration of the use of the cystoscope and the proctoscope. Chapters on certain emergencies, such as strangulated hernia, intestinal obstruction, acute abdominal lesions, poisoning, head injuries and suffocation, are fairly well written, but their location in the book, grouped as a distinct and separate section, is confusing, since much of the other subject matter, such as fractures and injuries, are also emergencies. The specialties, including eye, nose and throat, larynx, ear and teeth, are written by specialists. The majority of the chapters on the eye might well have been left to a special work on the subject, which criticism applies in a less degree to the consideration of the other specialties in this group. The chapter on the choice and administration of anesthetics, by Blomfield, when considered from the American point of view is obsolete. There is only one page devoted to local anesthesia. This certainly merits greater consideration and might well be elaborated. There are acceptable chapters on preoperative and postoperative care. There is a brief chapter on urine examination and on the roentgen ray. The chapters written by collaborators are not uniform in following up the purpose of the book, and have been rather poorly assembled. The author has done well in rewriting this work, which contains an immense amount of important detail, of value to the intern and to the private practitioner doing surgery.

Vorlesungen ueber Histo-Biologie der menschlichen Haut und ihrer Erkrankungen. Von Dr. Josef Kyrle, A. O. Professor für Dermatologie und Syphilis an der Universitat in Wien. Erster Band. Paper. Price, 45 gold marks. Pp. 345, with 222 illustrations. Berlin: Julius Springer, 1925.

This is the outgrowth of a series of lectures covering the histobiology of the skin, which the author takes up under two heads—one a general biologic one and the other a demonstration of histologic specimens. Thus, he would supplement the earlier works of Unna, Macleod and others by laying special emphasis on the biologic processes underlying the structural changes in the skin and only briefly considering pure morphologic changes. The first volume includes chapters on normal skin, pigment, atrophies, hypertrophies and parasitic skin diseases. A possible exception might be taken to the author's including among the hypertrophies such subjects as nevi, lymphangioma, fibroma, keloid and neuroma, which are usually classified with benign new growths. The work is profusely illustrated with exceptionally clear histologic drawings, and will prove of great value to all interested in the scientific study of cutaneous diseases.

Dyspepsia, Its Varieties and Treatment. By W. Soltau Fenwick, M.D., B.S. Second edition. Cloth. Price, $6 net. Pp. 515, with 14 illustrations. Philadelphia: W. B. Saunders Company, 1925.

This is a masterly treatise on the clinical features of indigestion, excelling especially by a careful study and readable presentation of those points in the symptomatology that are of value in the differential diagnosis. The author's therapy is sensible and efficient as long as he relies on his own experience. Unfortunately, at times he throws in—for good measure, evidently—insufficiently tested recommendations by others that can only confuse the student.

Fundamentals of Chemistry. A Text-Book for Nurses and Other Students of Applied Chemistry. By L. Jean Bogert, Ph.D., Research Chemist, Obstetrical Department, Henry Ford Hospital, Detroit. Cloth. Price, $2.75. Pp. 324, with 18 illustrations. Philadelphia: W. B. Saunders Company, 1924.

This book, written for nurses, is another addition to the already great number of texts on chemistry for beginners. It appears, however, to justify its existence in a general way by emphasizing such facts in chemistry as will be of practical value to nurses. Attention is given to the fundamentals of nutrition, the digestive fluids, blood, lymph, milk, urine and feces. The appendix contains tables of English and metric equivalents, Centigrade and Fahrenheit equivalents, antidotes to poisons and directions for the removal of stains. In covering such a wide range of subject matter as the title includes, the details must necessarily be brief, and only the most elementary facts are given without reference to the literature. Nevertheless, the information is given in an attractive manner, so that the text will be of interest to the general reader. A few imperfections were noted. For example, acacia and gum arabic are mentioned as separate information here enclosed in quotation marks made a fairly good accusation against the coyote, but the information stated no offense against the person in charge of the animal.

The authority of the local health officer, known as the county superintendent of public health, is found in Section 8672 of the Compiled Statutes of 1921, which empowers him "to abolish nuisances that are dangerous to public health, to isolate persons affected with dangerous and contagious diseases, and to do such other things, with the approval of the state board of health, as may be deemed necessary for the preservation of the public health within said county." The statute does not in express terms make provision for the suppression or treatment of rabies, and there was no sufficient allegation that the keeping of the coyote constituted a nuisance.

Within reasonable bounds, the legislature may confer regulative powers on the state board of health, and give to that board authority to adopt rules and regulations having the force and effect of law. The statute, by inference at least, gives the state board of health power to make and enforce reasonable regulations; but there was no allegation in the information that the board of health had promulgated any rules relative to animals afflicted with rabies, by authority of which the county superintendent of public health assumed to act; and the courts cannot assume that such rules were promulgated.

It follows, therefore, that, to sustain a prosecution of this character, the written accusation should aver that the state board of health made, promulgated and published some rule or regulation concerning rabies, and that the accused resisted or interfered with the operation of such rule sought to be enforced by an authorized agent charged with that duty. In other words, where the public health statutes make no specific provision for the suppression or control of rabies and there are no averments in the information that the state board of health promulgated any rules on that subject, the courts will not assume that such rules were promulgated. The authority of a local health officer to act in the premises should be pleaded.

Medical Practice Act and Injunction—Chiropractors

(Johnson v. State (Texas), 267 S. W. R. 1057)

The Court of Civil Appeals of Texas says that at the conclusion of the evidence in this case, which was tried before a jury, the court directed a verdict in favor of the state and entered a judgment which enjoined defendant Johnson from in any way practicing medicine in violation of the provisions of Title 90, Ch. 1, of the Revised Statutes of Texas, or in violation of the provisions of Title 12, Ch. 6, of the Penal Code of the state; and also enjoined him from thereafter in any way treating or offering to treat any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method, or to effect cures therefor, for money or other compensation within the state of Texas. It was in evidence that he had been duly tried and convicted on an information which charged him with practicing medicine in violation of law, and that he was pursuing his profession of chiropractor at the time of the trial of this case without having complied with the medical practice act. Evidence that he was an inhabitant of the city of Greenville and had established a residence there for the purpose of pursuing his profession fixed such a residence in Hunt County as gave the district court of that county venue of this suit.

The provision of the statute that a suit for injunction shall not be entertained in advance of a previous final conviction of a violation of the medical practice act is not a limitation on the state in the matter of evidence and does preclude the admission in the suit for injunction of evidence of the defendant's treatment of patients for pay previous to such conviction.

It was urged that Title 90, Ch. 1, of the Revised Statutes, and Title 12, Ch. 6, of the Penal Code, as amended by Chapter 138 of the Acts of the Thirty-Eighth Legislature are unconstitutional and void. The logic of the defendant's contention was that, as the various schools established by the different systems of the practice of medicine to qualify one for the treatment of disease and human deformity are based on radically different theories, both as to the cause of said ills and as to their treatment, manifestly there can be prescribed by the legislature no general or common educational test to determine the fitness of one to practice his own system of the healing art. Instead of the one common test as prescribed by the medical practice act, the legislature must provide for an education and examination appropriate to the particular school, in order that such legislation shall not fall within the constitutional inhibition against discrimination. The court does not agree with that contention.

The conditions prescribed as necessary prerequisites in the matter of education and training for entry into the medical profession by Articles 5739 and 5741 of the Revised Statutes, which are a part of the medical practice act, represent that which the legislature in its wisdom deemed necessary in the interest of the public health and the public welfare as the state's guaranty of fitness for this high calling. These conditions apply to all persons alike; they do not prescribe any method to be employed in healing disease, or any system of practice to be adopted by the practitioner. If he possesses the qualifications prescribed by the statutes and is awarded a certificate to practice medicine, he is just as free to adopt the system of the chiropractor as he is to adopt the system of the regular physician. The fact that it requires a broader education than is given by the chiropractic college to meet these conditions cannot be urged as a discrimination against such schools of medicine. It is easily within the power of a chiropractor to conform to the prescribed conditions. This record showed that all the subjects prescribed by this act for examination are taught by the chiropractic schools, except those of surgery and medical jurisprudence; so it may be said that these schools give substantial recognition to the essential qualifications prescribed by these statutes.

Nor does the court think that Article 5744b of the Revised Statutes, under which the injunction proceedings in this case were instituted, invades any constitutional guaranty of the citizen. The fact that a person enjoined from the practice of medicine might be prosecuted for the doing of the very acts for which he was held and punished for contempt invades no guaranty of the citizen's rights.

There was no error in instructing a verdict in this case. Rehearing denied.

Society Proceedings

COMING MEETINGS

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., Sept 16-18 Dr. James E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Electrotherapeutic Association, Chicago, Sept 15-17. Dr. Richard Kovacs, 223 East 68th Street, New York, Secretary.

American Roentgen Ray Society, Washington, D. C., Sept. 22-25. Dr. Charles L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 29-Oct. 1. Dr. F B. Stephenson, Metropolitan Building, Denver, Secretary.

Idaho State Medical Association, Pocatello, Sept. 10-12. Dr. J. N. Davis, Kimberly, Secretary.

Indiana State Medical Association, Marion, Sept. 23-25. Mr. T. A. Hendricks, Hume Mansur Building, Indianapolis, Executive Secretary.

Michigan State Medical Society, Muskegon, Sept 8-10. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Secretary.

Mississippi Valley Conference on Tuberculosis, Lansing, Mich., Sept. 15-17. Dr. T. J. Werle, 209 W. Shiawassee Street, Lansing, Mich., Executive Secretary.

Missouri Valley, Medical Society of the, St. Joseph, Sept. 30 Oct. 2. Dr. Charles Wood Fassett, 115 East 31st Street, Kansas City, Mo., Secretary.

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Nevada State Medical Association, Elko, Sept. 4-6. Dr. C. E. Piersall, 17 N. Virginia Street, Reno, Secretary.

Oregon State Medical Society, Medford, Sept. 2-4. Dr. C. L. Booth, 1021 Selling Bldg., Portland, Secretary.

Utah State Medical Association, Salt Lake City, Sept. 7-12 Dr. William L. Rich, Boston Building, Salt Lake City, Secretary

Washington State Medical Association, Seattle, Sept. 17-18. Dr. C. H. Thomson, Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 16-18. Mr. J. G. Crownhart, 558 Jefferson Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

30: 1-146 (July) 1925

History of Pediatrics. J. Ruhräh, Baltimore.—p. 1.
*Insulin in Treatment of Malnourished Infants. F. F. Tisdall, A. Brown, T. G. H. Drake and M. G. Cody, Toronto.—p. 10.
*Anemia in New-Born Infant: Case. H. N. Sanford, Chicago.—p. 19.
*Gastric Analyses in Normal Infants and in Those Convalescent From Diarrhea. W. C. Davisson, Baltimore.—p. 23.
*Kidney: Filter for Bacteria. V. Effect of Nephrotoxins. H. F. Helmholz and R. S. Field, Rochester, Minn.—p. 33.
*Calcification of Rachitic Bones in Vitro. P. G. Shipley, B. Kramer and J. Howland, Baltimore.—p. 37.
*Inorganic Constituents of Blood in Nephritis of Children. Jerome L. Kohn, New York.—p. 40.
Growth of Chinese. V. B. Appleton, Honolulu.—p. 43.
*Ventricular Escape; Unusual Cardiac Rhythm in Child. J. E. Wood, Jr., University, La.—p. 50.
*Relapses in Measles. I. H. Goldberger, New York.—p. 55.
*Unresolved Pneumonia in Children. Treatment with Roentgen Rays. G. N. Krost, Chicago.—p. 57.
*Antirachitic Action of Cod Liver Oil. Comparison of Fresh Oil with Concentrate Prepared from Oil. H. E. Dubin, New York.—p. 72.
*Ectopia Cordis: Case. G. D. Cutler and G. Wilens, Boston.—p. 76.
Congenital Transduodenal Bands. Three Cases. F. C. Neff and R. L. Haden, Kansas City, Mo.—p. 82.
Progress in Pediatrics. Anatomy, Physiology and Pathology of Infancy and Childhood. J. B. Holmes, Baltimore.—p. 87.

Insulin for Malnourished Children.—The effect of the administration of insulin to nine malnourished infants has been studied by Tisdall et al. A definite increase in weight was obtained in about 50 per cent. of the cases. In these cases in many instances, however, other factors were present which lessened the probability that insulin was the cause of the increase in weight.

Anemia in New-Born Infant.—The case reported by Sanford showed a marked anemia in an apparently healthy newborn infant at birth. The blood showed evidence of extreme activity, such as high leukocyte count, and decreased blood platelet formation. There was no evidence of blood destruction, for the jaundice, appearing on the second day and disappearing on the fourth, occurred during improvement in the blood picture, and normal bleeding and coagulation time. Furthermore, the van den Bergh test for hepatic bilirubin was positive, suggesting this jaundice to be of hepatic origin. During this time the liver also decreased in size. The spleen steadily decreased in size as the blood picture improved, and this without treatment of any kind. The mother's blood picture was normal at the time of this delivery and at the former delivery, and also the older brother's blood was normal. There was no family history of syphilis, tuberculosis, debility or miscarriages. The child's recovery was rapid and complete without any treatment, except for slight roentgen-ray exposure when the extremities were photographed.

Gastric Analysis of Normal Infants and Those Suffering from Diarrhea.—Determinations were made by Davison of the hydrogen ion concentration and of the amylase and trypsin activity of forty-nine specimens of gastric contents from a series of normal infants and of those convalescent from diarrhea. Diets of some form of lactic acid milk increased the gastric acidity, but there was very little evidence that either these diets or the increased gastric acidity resulting therefrom destroyed many organisms in the stomach. The acidity of specimens collected less than six hours after a meal was higher than that of the specimens obtained later. Elevation of the body temperature and the presence of vomiting increased the gastric acidity. Practically no difference could be found in the reaction or cultures of the gastric contents of normal infants and of those convalescent from diarrhea.

Kidney Filter for Bacteria.—Helmholz and Field assert that injury to the kidney by mercuric chlorid or uranium acetate does not change the kidney filter for bacteria. Cantharidin in large doses produces sufficient damage to allow bacteria to pass through the kidney in four hours. In smaller doses, sufficient to produce definite hematuria, bacteria are held back for the usual period.

Calcification of Bones in Vitro.—According to Shipley et al. calcification of bones in vitro occurs as it does in vivo.

Inorganic Constituents of Blood.—It seems from the cases studied by Kohn that the inorganic constituents of the blood remain fairly normal and constant. One patient showed about the same sodium, potassium and calcium content in the blood when there was marked edema, when the edema was disappearing or when it was no longer visible. The inorganic analyses of the blood from chronic nephrosis, with or without edema, or acute hemorrhagic nephritis, show no marked differences in the inorganic salt content of the blood. One patient with hypertension, with a marked nitrogen retention showed no variation from the normal so far as the sodium, potassium and calcium content were concerned.

Unusual Cardiac Rhythm in Child.—A report of an unusual cardiac rhythm in a child, aged 11 years, is presented by Wood. The rhythm was normal, except for sinus arrhythmia and for one premature beat about every one and one-half minutes. Escape of the ventricle occurred in the second, seventh, eighth, ninth and tenth beats, apparently dependent on the lengthened diastolic pauses of the sinus slowing of expiration.

Relapses in Measles.—The three cases of relapsing measles reported by Goldberger were identical both in severity and duration to the original attacks. The relapse occurred on the twenty-fifth, seventeenth and twenty-eighth day, respectively. The third patient had received convalescent measles serum immediately after first exposure to the disease, but with no preventive effect.

Roentgenotherapy of Unresolved Pneumonia.—In twelve cases of unresolved pneumonia treated by Krost by roentgen ray there was apparent benefit in eleven. There seemingly was fever and constitutional reaction in three cases. This was temporary and probably beneficial.

Antirachitic Action of Cod Liver Oil.—It is evident from Dubin's work that the concentrate—the ether soluble, nonsaponifiable fraction—of cod liver oil is just as potent an antirachitic agent as the oil from which it is made, gram for gram. In order that the requirements for reproduction, as well as for growth, may be provided for, the diet should be so arranged that an excess of vitamins is present. The nonsaponifiable fraction of cod liver oil is admirably suited for this purpose, since it furnishes the necessary fat-soluble vitamins without disarranging the balance between fats, proteins and carbohydrates.

Ectopia Cordis.—A case of ectopia cordis is reported by Cutler and Wilens. In addition to the ectopia, anomalies of circulation were present; namely, patent foramen ovale, patent ductus arteriosus and stenosis of the aortic isthmus. An unsuccessful attempt was made to cover the heart with skin flaps.

American Journal of Electrotherapeutics and Radiology, New York

43: 213-250 (June) 1925

Teaching of Physiotherapeutic Measures. W. H. MacCraken, Detroit.—p. 213.
Treatment of Severe Metabolic Arthritis. S. A. Twinch, Newark, N. J.—p. 216.
Some of My Failures. H. E. Stewart, New Haven, Conn.—p. 225.
History of American Electrotherapeutic Association. W. B. Snow and G. B. Massey.—p. 230.

American Journal of Hygiene, Baltimore

5: 371-558 (July) 1925

*Cultivation of Endameba Histolytica. *W. C. Boeck and J. Drbohlav*, Boston.—p. 371.
Factors Which Should Determine Selection of Anthelmintic in Geographic Area. F. L. Soper, New York.—p. 408.
*Interracial Variation in Infant Mortality. J. V. DePorte, Baltimore.—p. 454.

Methods of Diagnosing Hookworm Infection on Egg Counting Methods. W. S. Sweet, New York.—p. 497.
*Epidemiologic Importance of Diphtheria Carriers. J. A. Doull and H. Lara, Baltimore.—p. 508.
Association of Bacillus Bronchisepticus and Bacterum Lepisepticum with Rabbit Snuffles. C. G. Bull and C. M. McKee, Baltimore.—p. 530.
*Severity of Hookworm Disease in Chinese Group, as Tested by Hemoglobin Readings for Anemia; Egg Counts for Degree of Infestation. N. R. Stoll and H. W. Tseng, Peking, China.—p. 536.

Cultivation of Endameba Histolytica.—Two strains of endameba were obtained by Boeck and Drbohlav in culture from two cases of amebiasis. These were morphologically identical with the endameba in the feces of the patients and with *Endameba histolytica.* The "K" strain was grown in cultures for eight months and eleven days and the "E" strain for three months. The most suitable artificial environment for the growth of *E. histolytica* was in either the Locke-egg-serum or Locke-egg-albumin medium, at a temperature of 27 C. An initial reaction of the medium of p_H 8.2-7.8 is necessary. Both strains isolated in cultures proved to be pathogenic for kittens in which the produced acute dysentery, colitis and, in kittens, liver abscess. The virulence of the amebae was influenced by prolonged cultivation.

Interracial Variation in Infant Mortality.—In a six-year period, 1916-1921, studied by Deporte he found a definite decline in the rate of infant mortality in all racial groups. The decline has been both absolute and relative, reducing the degree of variation between the rates of the diverse groups. The differences in the rates of infant mortality of the several groups have been due primarily to differences in the rates of mortality from diseases of the digestive and respiratory systems, and therefore, in large measure, influenced by environmental factors which are, theoretically, preventable. There has been less change, absolute or relative, rates of mortality of infants under one month. These are brought about by causes as yet little understood, ept in the case of premature births, not likely at the nt time to yield to organized public effort. The differences between the various groups in these rates very probably have a biologic basis, and, in this sense, may be termed racial.

Epidemiologic Importance of Diphtheria Carriers.—In a study made by Doull and Lara of 758 clinical cases of diphtheria in Baltimore it was found that of 2,799 family contacts not receiving prophylactic antitoxin, fifty-nine, or 2.1 per cent., were attacked later than one and not later than thirty days following the onset of the primary case. In contrast to this, investigation has shown that in the family contacts of 1,044 school carriers, estimated to number 4,665, only fourteen cases were reported within thirty days of the discovery of the carrier. This study fails to show any significant distinction between the risk of attack for those exposed respectively to carriers classified as "virulent," "avirulent" and "not tested."

Hookworm Disease.—This study by Stoll and Tseng constitutes most important direct evidence on the validity of egg count data, "basis of formed feces," in analyzing community infestation for hookworm disease. It constitutes indirect evidence also on the validity of the egg count technic and a general correspondence between egg counts and worm infestations.

American Journal of Obstetrics and Gynecology, St. Louis

9: 745-898 (June) 1925

Coincidence and Interference of Uterine Tumors. O. Frankl, Vienna. —p. 745.
*Congenital Polycystic Kidneys; Fourteen Cases. J. E. Davis, Detroit, Mich.—p. 758.
*Relation of Dysmenorrhea to Interstitial Thyrotoxicosis as Proved by Therapeutic Measures. A. E. Hertzler, Halstead, Kan.—p. 783.
*Streptococci from Chronic Infection of Cervix Uteri and Fallopian Tubes. C. W. Barrett, A. F. Lash and I. Pilot, Chicago.—p. 797.
Indications for and End-Results of Sturmdorf Operation. W. A. Coventry, Duluth, Minn.—p. 804.
*Clinical Similarity Between Eclamptic Toxemia and Acute Glomerulonephritis. R. D. Mussey, Rochester, Minn.—p. 808.
*Relation of Postoperative Peritonitis to Periodic Epidemics of Infection. R. R. Huggins, Pittsburgh.—p. 819.
Semicircular Mattress Suture of Vagina Immediately Following Labor. R. S. Tilles, St. Louis.—p. 823.
Technic of Classical Cesarean Section. J. S. Lawrance, Philadelphia.—p. 830.
Ethylene-Oxygen in Obstetrics. E. L. King, New Orleans.—p. 835.
Chronic Infections in Pregnancy. W. A. Fowler, Oklahoma City.—p. 837.
Rubin Test. T. R. Morgan, Philadelphia.—p. 843.
Three Hundred Pregnant Negro Women Having Four-Plus Wassermann. J. R. McCord, Atlanta, Ga.—p. 850.
Weight During Pregnancy. C. R. Hannah, Dallas, Texas.—p. 854.
Responsibility of Medical Profession in Further Reducing Maternal Mortality. A. Flint, New York.—p. 864.

Congenital Polycystic Kidneys.—It is of very great importance, in Davis' opinion, that the deformations of the urinary organs are usually a part of a multiple group of stigmata and that the condition of congenital polycystic kidneys is frequently associated with the same type of degenerative change in other organs, as, for example, in the liver in 19 per cent. of all cases reported in the literature and also with various deformities in other parts of the body. Davis concludes from the evidence gathered in this study that congenital polycystic kidneys are caused by defective protoplasm which may be inherited or congenital in obedience with the same biologic laws governing the recessive characteristics illustrated in phylogenetic changes and in other congenital deformities.

Relation of Dysmenorrhea to Thyrotoxicosis.—Hertzler says that many young women present small goiters associated with mild degrees of thyrotoxicosis. Anatomically, these glands show changes in the colloid, inactive acinal epithelium and apparently an increase in the cells situated between the acini. Many of these patients have an associated dysmenorrhea without demonstrable anatomic changes in the pelvic organs. When these patients are treated in the conventional manner for their goiters, the dysmenorrhea disappears in the vast proportion of cases. This applies as well to the groin pains so commonly diagnosed chronic appendicitis, for the relief of which appendectomy is wholly impotent.

Bacteriology of Chronic Cervicitis.—The bacteriologic results of examinations made by Barrett, Lash and Pilot of fallopian tubes from 100 patients and of forty cervical cultures from the same patients were: *Streptococcus hemolyticus* was found in 14 per cent.; *S. viridans* in 21 per cent., and *S. indifferens* in 3 per cent. *S. hemolyticus* occurred in two of the forty cervical cultures; while *S. viridans* appeared in eleven instances. In two instances, *S. viridans* in the cervix was found associated with *S. viridans* in the tubes; and in two others, *S. hemolyticus* in the cervix was associated with *S. viridans* in the tubes.

Clinical Similarity Between Eclampsia and Glomerulonephritis.—Mussey reports eleven cases of eclamptic toxemia, in ten of which the clinical picture simulated acute glomerulonephritis. The outstanding features in this study are the comparatively rapid onset of symptoms which obtained in most of the cases, the hypertension and its rapid fall to normal, usually coincident with the increased urinary output, the disappearance of the edema, and amelioration of symptoms. The comparative absence of nitrogen retention in the blood, and the apparently complete recovery of most of these patients is also similar to those patients with acute glomerulonephritis. As this study lacks histologic data, comment is made only on the similarlity between the clinical picture and renal function of the two groups.

Periodicity of Postoperative Peritonitis.—The mortality from postoperative peritonitis in Huggins' work previous to 1917-1918 was 2 per cent. Since that time it has exactly doubled. He believes that there has been some relationship between this postoperative complication and the influenza epidemics that have occurred during the last six years.

American Journal of Ophthalmology, Chicago

8: 513-600 (July) 1925

Tower Skull: Oxycephalus. F. A. Davis, Madison, Wis.—p. 513.
Oxycephaly with Ocular Complications. M. L. Lerner, Rochester, Minn. —p. 542.
Toti's Operation for Dacryocystitis; Sixteen Cases. V. L. Raia, Providence, R. I.—p. 547.
Retrobulbar Spindle Cell Sarcoma. A. W. Greene, Schenectady, N. Y. —p. 550.
Adrenalin Chlorid; Subconjunctival Injection for Glaucoma. G. O. Ring, Philadelphia.—p. 553.
Refraction. E. J. Gardiner, Chicago.—p. 557.

American Journal of Roentgenology and Radium Therapy, New York

13: 514-613 (June) 1925

Cholecystography. S Moore, St. Louis—p. 515.
Roentgen Ray Diagnosis of Bronchiectasis. A. B. Moore and W. J. Marquis, Rochester, Minn—p. 527.
*Roentgenography of Hydatid Cysts of Lung. C. Heuser, Buenos Aires, S A—p 529.
*Stomach with Two Gas Bubbles: Case. J. R. Lutz, New York.—p. 534.
Common Causes of Shoulder Pain. P. F. Butler and J. F. Elward, Boston—p 536.
Chronic Infection of Gastro-Intestinal Tract: Roentgen-Ray Manifestations C Eastmond—p. 541.
Cancer of Tongue and Mouth. C. C. Simmon, Boston.—p. 545.
Roentgen Ray Treatment of Chronic Spondylitis Deformans (Chronic Sacro-Iliac Lumbalgia or Chronic Vertebral Rheumatism). C. A. Pfender, Washington, D. C—p. 551.
Treatment of Purpura Hemorrhagica by Roentgen Ray Irradiation of Spleen H K Pancoast, E. P. Pendergrass and T. Fitz Hugh, Philadelphia—p. 558.

Hydatid of Lung in Buenos Aires.—Heuser says that in Buenos Aires hydatid cysts of the lung are seen with equal frequency in men, women and children; they are as frequent on the left as on the right side; and they occur with equal frequency in the country and in the city.

Stomach with Two Gas Bubbles.—A case is presented by Lutz which showed: (1) Gastro-enterostomy functioning well *sixteen years after operation.* (2) *Totally* occluded pylorus, probably done as emergency operation for injury; ten years without symptoms. (3) Two gas bubbles. The usual gas bubble is in the fundus and a second bubble is in the antrum with two corresponding fluid levels. (4) Reverse peristalsis in the antrum so that the stomach is divided into two parts functionally, the peristalic action of both parts moving contents toward a centrally located gastro-enterostomy stoma

Annals of Clinical Medicine, Baltimore

3: 731-796 (June) 1925

Contributions of Medical Department of United States Army to American Medicine M. W Ireland, Washington, D. C.—p. 731.
Contributions of Medical Corps, United States Navy, to American Medicine E R Stitt, Washington, D. C.—p. 747.
Twenty Five Years' Prognosis in Public Health. H. S. Cumming, Washington, D C.—p 761
Medical Work in Panama Canal Zone as Viewed by an Outsider. W G Morgan, Washington, D. C—p. 772.

Annals of Medical History, New York

7: 103-204 (June) 1925

Chinese Drug Stores K. K. Chen, Peking, China.—p. 103.
Stephan Hales (1677-1761). G. E. Burget, Portland, Ore—p. 109.
Medical Essay on Timaeus J. Wright, Pleasantville, N Y—p. 117.
Gerhard Henrik Armauer Hansen (1841-1912). I. Kobro, Oslo, Norway.—p 127
Experimental Cancer, Historical Retrospect. E. B Krumbhaar, Philadelphia—p 132
Maimonides on "Physical Hygiene." L. J. Bragman, Syracuse, N. Y.—p 140
Samuel Thomson (1769-1843). J. M. Ball, St. Louis—p. 144.
Selections from Gibson's "Rambles in Europe" F. R. Packard, Philadelphia—p 153
Thomas Sydenham, Clinician. D. Riesman, Philadelphia.—p. 171.
Curiosities from Collection of Calculi in Museum of Royal College of Surgeons A Randall, Philadelphia.—p. 181.

Boston Medical and Surgical Journal

193: 43-90 (July 9) 1925

Roentgen Ray Diagnosis of Disease in Nasal Accessory Sinuses. G. W. Grier, Pittsburgh.—p. 50

Canadian Medical Association Journal, Montreal

15: 685-770 (May) 1925

Trend of Medical Education and Medical Service. G. S. Young.—p. 685.
Present Standing of Therapeutics. R. D. Rudolf.—p. 689.
Successive Stages in Control of Tuberculosis. E. R. Baldwin.—p. 693.
*Extractives of Liver Possessing Blood Pressure Reducing Properties. W. J. MacDonald.—p 697.
Control of Blood Pressure with Liver Extracts. A. A. James and N. B. Laughton—p. 701.
Bacterial Phagocytosis by Epithelial Cells of Conjunctiva. S. H. McKee.—p 703.
*Morbid Anatomy of Rheumatic Fever. S. Meltzer.—p. 705.
*Acute Septic Tracheitis. J. G. Strachan.—p. 708.
Rheumatic Fever in Childhood. H. B. Cushing.—p. 711.
Failing Vision After Middle Life Without Associated Pain. J. V. Connell.—p 713.
Infections of Hands G. E. Wilson—p. 715.
Influence of Natural Chemical Stimuli on Movements of Alimentary Canal. B. P. Babkin.—p. 719.
Value of Diazo Color Reaction in Differential Diagnosis of Uremia. I. M. Rabinowitch.—p 725.
Disadvantages of Workmen's Compensation Act Lead Employer to Be Less Interested in Health of Employee W. L. T. Addison.—p. 728.
Postoperative Treatment of Flexion at Hip. A. MacK. Forbes.—p. 730.

Liver Extracts Lower Blood Pressure.—MacDonald reports blood pressure observations on a series of normal rabbits and also on a series of cases of clinical arterial hypertension in which there has been a fall in both systolic and diastolic pressures, following the administration of certain extracts prepared by him from the liver. In all, thirty-three clinical cases have been studied. In twenty-five cases the patients experienced no disagreeable symptoms, most of them reporting apparent relief of the unpleasant symptom of hypertension. In eight cases there followed reactions of varying degree, some of which closely resembled protein shock, i. e.: chill, rise in temperature lasting several hours, nervousness, loss of appetite and weakness, together with a sharp fall in both systolic and diastolic pressures. In the cases free from symptoms. one injection served to depress the blood pressure from one to three or more days, according to size of dosage. In all the favorable cases the return to hypertension was gradual. The chemical nature of these liver extracts has not yet been ascertained, but these experiments indicate that the active material is not a protein. It would therefore appear that these extracts possess some specific quality which exerts a definite depressor effect on normal blood pressure in animals and marked hypertension in man.

Morbid Anatomy of Rheumatic Fever.—Meltzer asserts that acute rheumatic fever presents a typical histologic picture by which the lesions can be recognized, whether they occur in the vascular system, the joints, or the skin. It is a generalized disease of the cardiovascular system, striking chiefly the heart and the aorta, in which the joint lesions play only a subsidiary part. The exudative lesion in the joints is a minor factor.

Acute Septic Tracheitis.—The three cases reported by Strachan all occurred in healthy, robust male children, between the ages of 2 and 9 years They developed in the months of January, February and March. In each case the onset was sudden, with dyspnea, hoarseness and fever, the dyspnea becoming progressively worse. Although hoarseness was present, in no case was the voice lost. The obstruction was subglottic and was relieved by tracheotomy, intubation being of no avail. All these cases were thought at the first to be laryngeal diphtheria and were treated as such. Cough, although present, was negligible. The progression of the disease was rapid. The dyspnea was very troublesome and the toxemia great. The duration in each case was about three days. Toxemia was the apparent cause of death, but no doubt the labored breathing must have been a factor in the myocardial fatigue. Examination post mortem showed varying degrees of superficial ulceration of the tracheal mucosa, very marked in the subglottic region and diminishing in the lower part of the trachea. In one case, in which the duration had been somewhat shorter than in the others, the lower third of the mucosa appeared to be normal. Bronchitis was present in each case in some degree. Bronchopneumonia was present also but in no case was it widespread.

Florida Medical Association Journal, St. Augustine and Jacksonville

12: 1-26 (July) 1925

Looking Backward Over Fifty Years of Health Work in Florida. J. Y. Porter, Key West.—p. 1.
Observations Relating to Feeding of Children with Bacillary Dysentery. J. D. Love, Jacksonville.—p. 3.
Case of Double Uterus with Pregnancy of Each. W. M. Rowlett, Tampa—p. 5.
Dactylomegaly; Bilateral; Only Case Reported. R. R. Killinger, Jacksonville—p. 6.
Abrasions. F. M. Rivers, Kissimmee.—p. 10.
Postencephalitic Syndrome, Potent Conjugate Upward Movement of Eyes with Temporary Fixation. G. H. Benton, Miami.—p. 12.
Strictures of Ureter. H. D. Synder, Pensacola.—p. 13.

Georgia Medical Association Journal, Atlanta

14: 267-311 (July) 1925

Making a Diagnosis. R. M. Harbin, Rome—p. 267.
History of Medicine and Surgery in Georgia. J. L. Campbell, Atlanta.—p. 271.
Focal Infection Below Neck. J. H. Butler, Augusta—p 276.
Metastatic Infection as Related to Foci About Head. C. I. Bryans, Augusta.—p. 278.
Anencephalic Monster: Case. O. R. Thompson, Macon.—p. 283
Relation of Preventive Pediatrics to Epilepsy. G. W. H. Cheney, Atlanta.—p. 285.

Illinois Medical Journal, Oak Park

48: 1 82 (June) 1925

Physical Factors in Production of Appendicitis. H. Gray, Montreal.—p. 33.
Obstetrics in Home Analysis of 500 Cases J. J. Gill, Chicago—p 38.
Goiter. W. I. Terry, San Francisco—p 46.
Injuries to Blood Vessels; Management. R. W. McNealy, Chicago—p. 48.
Periodic Health Examination Campaign. H. Swanberg, Quincy.—p. 51
Classification of Goiter from Standpoint of General Practitioner. J H Hutton, Chicago—p 52
Prognosis in Heart Disease F. A. Willus, Rochester, Minn.—p 55
Hypertonic Glucose Solution in Treatment of Syphilis F Herb Chicago—p. 61.
Medical Treatment of Empyema; Chemotherapy. R. G. Major, Kansas City, Kan.—p 65.
American Physicians and Surgeons in Hungarian Universities E. Horvath, Budapest, Hungary.—p 68
Contusions of Abdomen Associated with Visceral Injury. G. E Brewer, New York.—p. 70
Milk Sickness. M Greer, Vandalia—p 75.
What is Diathermy? L B. Bignall, DeKalk.—p 77.
Oil of Bitter Orange Peel with Ether Anesthesia A Weiss, Chicago.—p. 79.

Journal of Biological Chemistry, Baltimore

114: 229 507 (June) 1925

*Interfering Effect of Glycerol on Biuret Reaction F B Seibert and E. R. Long, Chicago—p 229
Mechanism of Oxidation of Thymine, 4,5 Dihydroxyhydrothymine (thymine glycol) O Baudisch and D Davidson—p 233
*Proteins of Wheat Bran II. D. B Jones and C E F. Gersdorff, Washington, D C.—p 241
Micro-Method for Determining Nitrogen A R Rose, Newark, N. J.—p. 253.
Globulines of Jack Bean (Canavalia Ensiformis) II. J B Sumner and V. A Graham, Ithaca, N Y—p 257
*Fat Soluble Vitamins XXIII Induction of Growth Promoting and Calcifying Properties by Exposure to Light H. Steenbock and A. Black, Madison, Wis.—p 263.
*Id. XXIV. Cod Liver Oil. E M Nelson and H Steenbock, Madison, Wis.—p. 299.
Production of Acidosis by Anoxemia A E Koehler, E H Brunquist and A. S. Loevenhart, Madison, Wis—p 313
Relation of Histidin and Arginine to Creatin and Purine Metabolism. W. C. Rose and K. G Cook, Urbana, Ill—p 325
Electrostatic Forces in Diffusion of Water Through Collodion Membranes Between Solutions of Mixed Electrolytes E F Adolph, Baltimore.—p. 339.
*Nature of Heat Denaturation of Proteins. H. Wu and D Y. Wu, Peking.—p. 369
Saponins III. W. A Jacobs, New York.—p 379
Strophanthin. VII. Strophanthidin. W. A Jacobs and A. M. Collins, New York.—p. 383.
Effect of Heat on Solubility of Calcium and Phosphorus Compounds in Milk. R. W. Bell, Ithaca, N Y.—p 391.
Influence of Diet on Synthesis of Hippuric Acid. W. H. Griffith, St. Louis.—p. 401.
Biochemical Study of Bone Growth. I. F. S. Hammett, Philadelphia.—p. 409.
Calcium Content of Body in Relation to Age, Growth and Food. H. C. Sherman and F. L. MacLeod, New York—p 429.
Blood Supply to Pancreas W S Collens, New York.—p. 461.
Monoacetone Galactose. P. A. Levene and G M. Meyer, New York.—p. 473.
Condensation of Monosaccharids by Means of Dilute Mineral Acid P. A. Levene and R. Ulpts, New York.—p. 475.
*Physiologic Action of Parathyroid Hormone. J. B. Collip and E. P. Clark, Edmonton, Canada—p. 485.

Interfering Effect of Glycerol on Biuret Reaction.—Seibert and Long found that glycerol interferes markedly with the delicacy of the biuret test, presumably through its combining power for copper hydroxid. This inhibitory action is of great significance in testing nonprotein bacteriologic culture mediums for the development of protein as a result of bacterial growth. Ammonium citrate in concentrations corresponding to those used in culture mediums does not inhibit the development of the biuret color.

Proteins of Wheat Bran.—The proteins of wheat bran, consisting essentially of a prolamin, a globulin and an albumin, have been analyzed by Jones and Gersdorff by the van Slyke method, and the distribution of nitrogen and the percentages of the basic amino-acids have been estimated. The wheat bran proteins, in general, are characterized by a high content of the basic amino-acids This is particularly true of the albumin and globulin. The quantity of basic amino-acids found in the globulin exceeds that of most other vegetable proteins which have been studied. The significance of the high percentages of the so-called nutritionally essential amino-acids found is pointed out with respect to the nutritive value of the bran proteins.

Fat Soluble Vitamins.—Evidence of the antirachitic activation of fats is presented in considerable detail by Steenbock and Black using the line test, growth, and increased calcium content of bone, as criteria. Activated olive oil, kept in a stoppered bottle in the dark, was found unimpaired in activity after ten months As in cod liver oil, the antirachitic potency of irradiated fats lies in their unsaponifiable constituents. Mineral oil cannot be activated.

Antirachitic Property of Cod Liver Oil.—According to Nelson and Steenbock the compounds responsible for the anti-ophthalmic and antirachitic properties of cod liver oil are nonprecipitable by digitonin. A petroleum ether solution of the unsaponifiable constituents of cod liver oil standing for a year and a half in the laboratory did not lose its anti-ophthalmic or antirachitic potency Cholesterol isolated from cod liver oil was antirachitically inactive, but exposure to ultraviolet light made it active

Heat Denaturation of Proteins.—Evidence is adduced by Wu and Wu to show that the heat denaturation of proteins is the same process as the denaturation of proteins by dilute acids and alkalies at ordinary temperatures, and that the underlying reaction is one of hydrolysis.

Action of Parathyroid Hormone.—The preliminary experiments on the physiologic action of a hormone contained in certain parathyroid gland extracts have been extended and amplified by Collip and Clark The active principle has been obtained in a more purified, concentrated, and stable form. A method of extracting parathyroid glands is suggested and a provisional unit of potency defined

Journal of Experimental Medicine, Baltimore

42: 1-122 (July 1) 1925

*Microbic Virulence and Host Susceptibility in Paratyphoid Enteritidis Infection of White Mice VIII. Effect of Selective Breeding L T. Webster, New York—p 1
Surface Tension of Serum XIV Change in Surface Tension Occurring as Results of Immunization. P L du Noüy and L E. Baker, New York.—p 9
Studies in Experimental Syphilis III Possibility of Cure of Syphilis with Arsphenamin A M Chesney and J E Kemp, Baltimore—p 17.
*Id IV. Survival of Treponema Pallidum in Internal Organs of Treated and Untreated Rabbits. A M Chesney and J E Kemp, Baltimore—p. 33
*Blood Sugar Studies. I. Rapid Alterations in Level as Result of Injection of Killed Bacteria I T. Zeckwer and H Goodell, Boston—p 43.
*Id II Changes in Fatal Bacterial Anaphylaxis I. T. Zeckwer and H Goodell, Boston—p 57.
Organ Weights of Normal Rabbits W. H Brown, L. Pearce and C M Van Allen, New York—p 69
*Drainage of Thoracic Duct in Experimental Peritonitis B. Steinberg, Cleveland—p 83
Relation of Hyperglycemia to Relative Blood Volume, Chlorin Concentration and Chlorin Distribution in Blood of Dogs. L Foshay, Cleveland—p 89
*Urobilin Physiology and Pathology IV Urobilin and Damaged Liver. R. Elman and P. D McMaster, New York—p. 99

Susceptibility in Paratyphoid-Enteritidis Infection.—The effect of selective breeding on host resistance was studied by Webster. Survivors of an experimental mouse typhoid infection, selected and bred for a number of consecutive generations, gave birth to offspring which were more resistant to the disease than a random group of the same inbred race. Offspring of females most susceptible to this infection gave birth to individuals which were more susceptible than a group of similar unselected mice

Experimental Syphilis.—The results of this study by Chesney and Kemp support the idea that failure to reinoculate a treated syphilitic animal does not necessarily mean the existence of the first infection but might be interpreted as indicating the presence of an acquired resistance which persists in rabbits in which no trace of the first infection can be demonstrated.

Blood Sugar Level Following Injection of Killed Bacteria.—A rapid rise in the blood sugar level of rabbits was produced by Zeckwer and Goodell by intravenous injections of killed *Bacillus proteus, Bacillus coli* and *Bacillus paratyphosus* B, which returned to nearly the previous level in a few hours. A less pronounced rise in blood sugar was produced by killed *B. paratyphosus* A and *B. enteritidis.*

Blood Sugar Changes in Fatal Bacterial Anaphylaxis.—Zeckwer and Goodell found that during bacterial anaphylaxis there is a gradual rise in the blood sugar level, which attains an extremely high value at the time of death. The curve of blood sugar is quite similar whether anaphylaxis is induced by organisms which affect the blood sugar in the unsensitized animal or by organisms which have no such effect. No instances occurred in which there was not a marked hyperglycemia in anaphylaxis.

Thoracic Duct Drainage in Peritonitis.—When care is taken to produce a peritonitis, which in itself is almost uniformly fatal, drainage of the thoracic duct in dogs had no favorable influence on the course or result of the peritonitis. Under the conditions of Steinberg's experiments the thoracic duct did not serve in any important way as a drainage tract for bacterial contamination of the peritoneal cavity.

Urobilin and Damaged Liver.—A variety of evidence is presented by Elman and McMaster all of which supports the view that in the uninfected animal the intestinal tract is the only place of origin of urobilin, not merely under normal circumstances, but when there is biliary obstruction. Animals rendered urobilin-free by collection of all of the bile from the intubated common duct remain urobilin-free even after severe hepatic injury. Urobilinuria was never found after liver damage, except when bile pigment was present in the intestine. The evidence presented is said to prove that urobilinuria is an expression of the inability of the liver cells to remove from circulation the urobilin brought by the portal stream, with result that the pigment passes on to kidney and urine Urobilinuria occurs with a far less degree of liver injury than does bilirubinuria.

Journal of Nervous and Mental Diseases, New York

62: 1-112 (July) 1925

*Atypical Psychoses and Heterologous Hereditary Taints. J. C. Smith, Copenhagen, Denmark —p. 1.
Absence of Cord Changes in Case with Clinical Picture of Dorsal Myelitis. G B. Hassin and J. Favill, Chicago.—p 33.
Cartesian Method and Biologic Conception of Human Personality. R Mourgue, Nimes, France —p. 36.
Dementia Praecox in Twins D A. Johnston, *Cincinnati.—p. 41.*

Atypical Psychoses and Hereditary Taints.—The results of Smith's work may be summed up as follows: If heterologous hereditary characters are united, it will in the descending line entail the occurrence of a considerable number of psychoses, about one half of which are purely segregated as the pure psychoses of the separate dispositions, whereas the other half present combinations of the various phenotypes in the theoretically imaginable ways.

Journal of Urology, Baltimore

13: *575-726* (June) *1925*

*Elimination of Phenolsulphonephthalein by Normal and Diseased Kidneys E. C. Shaw, Baltimore.—p. 575.
Cysts of Prostate and Urethra. M. B. Wesson, San Francisco —p 695.
Mercurochrome Intravenously in Urologic Infections. H. H. Young, Baltimore —p 633.
Gonorrheal Infections of Kidney. H L Cecil, Dallas, Texas.—p. 673.
Habit Bladders. P. S. Pelouze, Philadelphia.—p. 679.
New Pathogenic Organism (Corynebacterium Thompson); Epidemic of Infection of Urinary *Fistula. E. C. Shaw and J. H. Hill,* Baltimore. —p. 689.
Two Cases of Urinary Retention Due to Prostatic Sclerosis Relieved by Radiotherm Cauterization. C. W. Collings, New York.—p. 715.

Elimination of Phenolsulphonephthalein by Kidneys.—The normal curve of the phenolsulphonephthalein elimination has been determined by Shaw by a series of forty-four tests on twenty-three normal subjects in which the urine was collected at fifteen-minute intervals for two hours. The curve is characterized by an average output of 40 per cent. during the first fifteen-minute period, 17 per cent. during the second, 8 per cent. during the third, 4 per cent. during the fourth and a gradual decrease to 0.5 per cent. during the eighth fifteen-minute period. There were one or more tests performed in the same manner in fifty-six cases with known renal lesions. All of these cases in which renal insufficiency was demonstrated by any other tests showed definite abnormalities in the curve of phthalein elimination and in several cases the presence of an abnormal curve indicated impending renal failure while the other tests were negative.

Medical Journal and Record, New York

122: 61-120 (July 15) 1925

Multiple Stage Operations Versus Immediate Excision of Pathology. F W Bancroft, New York.—p. 61
*Use of Dental Stent in Skin Grafts of Middle Ear and Mastoid Cavities. *J P. de River, San Francisco.—p 63.*
Chronic Prostatitis. Focal Aspects. J. K. Holloway and W. H. Von Lackum, Rochester, Minn —p 64
Case of Bilateral Gynecomastia F. Y. Durrance, New Orleans.—p. 67.
Diathermy in Pelvic Infections. T. H. Cherry, New York.—p. 69.
Digestive Symptoms Caused by Disease of Abdominal Vessels. I. W. Held, New York.—p 71
Transposition of All Viscera. J M. Cahan, Philadelphia.—p. 75.
*Experiences with Cholecystography. M. Einhorn, W. H. Stewart and E J Ryan, New York —p 77.
*Itching Skin Symptoms of Systemic Disease. W. H. Goeckerman, Rochester, Minn.—p. 83
Dercum's Method of Treating Neurosyphilis. D. L. Kerlin, Shreveport, La - p 86
Pruritus Ani C Goldman, Brooklyn —p. 88.
*Treatment of Acne by Combined Use of Roentgen-Ray and Mercury Quartz Light. E F Traub, New York —p. 90
Parasitic Eczema R. Boenke, New York —p. 91.
Rhus Dermatitis: Treatment with Poison Ivy Extract. R. O. Clock, Pearl River, N Y —p. 93.
Causes of Severe Syphilitic Lesions. J. Whittenberg, Brooklyn.—p. 94.
Bismuth in Treatment of Syphilis. G. J. Muellerschoen, Philadelphia. —p 97
Modern Medical Problems in Plato. J. Wright, Pleasantville, N. Y.—p 99
Fifty Years in Practice of Medicine. E. E. Montgomery, Philadelphia. —p 101.

Use of Dental Stent in Skin Grafting.—When it is desired to obliterate completely the mastoid and middle ear cavities, after having the wound prepared for the reception of a skin graft, de River immerses a sheet of sterile dental molding compound in hot water for a period of thirty seconds It is then taken out and allowed to cool, until it becomes flexible but not gummy. The compound is now packed into the mastoid cavity and middle ear and allowed to remain there until it hardens. With this impression of the cavity the graft is then obtained, preferably from the thigh, taking enough epidermis to cover the cavities. It is then spread over the impression compound, raw surface outward, making sure that there is no turning in of the edges. This done, the molding compound, with the graft lying around it, is inserted into the mastoid wound and firm pressure applied, so that it will slip into place and approximation of surfaces be obtained. The mastoid wound is allowed to remain open and a gauze pad is placed over it. Drainage is obtained through the external auditory canal by a gauze wick and a pressure bandage is applied to the mastoid wound. The bandage is removed in four days, the pressure compound taken out and the wound closed under local anesthesia.

Cholecystography.—The administration of tetra-iodophenolphthalein by mouth or jejunum, not in large doses is preferred by Einhorn et al. to the intravenous method, since the reactions are less following oral administration.

Itching Skin.—Goeckerman emphasizes the importance of regarding an itching skin as a signal of systemic disturbance which needs adjustment before the patient can be given proper treatment. The habit of merely prescribing some local antipruritic, so often indulged in, brings discredit to the profession. Each patient with an itching skin should receive close individual study, as the associated conditions are so variable. Only such careful consideration, looking farther than merely symptomatic relief, will result in permanent relief.

Treatment of Acne by Light.—Roentgen-ray treatment of acne, Traub says, is advantageously supplemented by the regular and careful removal of all comedones and the drainage of all deep pustules and abscesses. This greatly reduces the amount of scarring which would otherwise result were the roentgen rays employed alone. The artificial sunburn following the course reduces scarring greatly, peels off the dry and wrinkled skin, effaces any pigmentation, and probably lessens the danger of any roentgen-ray sequelae. By alternating one-quarter unit roentgen ray with mercury light treatment, at weekly intervals, all danger of a radiodermatitis is eliminated and the end result is most gratifying.

New Orleans Medical and Surgical Journal

78: 1-58 (July) 1925

Synergistic Analgesia in Labor. C. A. Wallbillich, New Orleans.—p. 1.
Pharyngeal Bursitis. E. L. Wilkins, Clarksdale, Miss.—p. 5.
Puerperal Septicemia. J. M. Bodenheimer, Shreveport, La.—p. 8.
Iridotasis for Glaucoma. J. S. Dunn, New Orleans.—p. 10.
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. B. Downey, Pittsburgh.—p. 12.
Relation of Focal Infections to Ocular Diseases. W. B. Smith, Shreveport, La.—p. 14.
Parinaud's Disease. E. L. Posey, Jackson, Miss.—p. 18.
Massive Excision of Subcutaneous Fat. A. P. Heineck, Chicago.—p. 20.
Sarcoma of Duodenum. C. J. Miller, New Orleans.—p. 27.
Roentgen-Ray Therapy. H. G. F. Edwards, Lafayette, La.—p. 28.

New York State Medical Journal, New York

25: 825-854 (July) 1925

Recent Advancements in Cholecystography. W. H. Stewart, M. Einhorn and E. J. Ryan, New York.—p. 825.
Tonsil Problem. A. M. Rooker, Niagara Falls.—p. 828.
Hornell Breast Feeding Demonstration. B. R. Wakeman, Hornell.—p. 831.

Northwest Medicine, Seattle

25: 309-356 (July) 1925

Diagnosis and Treatment of Tumors of Spinal Cord. A. W. Adson, Rochester, Minn.—p. 309.
Chest Surgery. J. E. Else, Portland.—p. 317.
*Periarterial Sympathectomy. E. W. Rockey, Portland.—p. 323.
Surgery of Galltracts. R. C. Coffey, Portland.—p. 326.
Diagnosis of Urogenital Tuberculosis. C. H. Doe, Tacoma.—p. 331.
Practical Examination for Renal Insufficiency. C. Ferguson, Spokane.—p. 334.
Inlying Ureteral Catheter. W. J. Stater, Portland.—p. 337.
Multiple Self-Inflicted Fatal Wounds. T. F. Mullen, Pocatello, Idaho.—p. 338.
Lymphosarcoma of Appendix and Cecum. C. E. Hagyard, Seattle.—p. 342.
Actinomycosis of Nasopharynx and Soft Palate. G. W. Montgomery, Caldwell, Idaho.—p. 344.
Goodfellowship. W. H. Heckman, Central Point, Ore.—p. 345.

Periarterial Sympathectomy.—Two of the three patients operated on by Rockey have evidently been definitely benefited. One case is of special interest in that two sets of arteries were involved.

Oklahoma State Medical Association Journal, Oklahoma City

18: 152-179 (July) 1925

Diarrhea in Infants from Standpoint of General Practitioner. C. Brydia, Ada.—p. 152.
Lactic Acid Milk in Artificial Feeding. C. V. Rice, Muskogee.—p. 154.
Diet Requirements of Infant. C. W. Arrendell, Ponca City.—p. 156.
Acute Otitis Media. H. S. Browne, Ponca City.—p. 159.

Radiology, Omaha

5: 1-92 (July) 1925

Treatment of Cancers of Uterine Cervix and Body. C. F. Burnam and W. Neill, Jr., Baltimore.—p. 1.
Irradiation in Cancer of Cervix. F. J. Taussig, St. Louis.—p. 5.
Etiology, Pathology and Treatment of Cancer of the Cervix. D. T. Quigley, Omaha.—p. 9.
*Myeloid Myeloma. S. Moore, St. Louis.—p. 18.
Roentgen-Ray Treatment of Bone Tuberculosis. J. D. Southard, Fort Smith, Ark.—p. 34.
Radiation Treatment of Bone Tumors. W. E. Costolow, Los Angeles.—p. 37.
New Device and Technic for Making Radiographs of Mastoids in Law and in Arcelin Positions. A. Granger, New Orleans.—p. 44.
Radioactive Substances; Therapeutic Uses. J. Muir, New York.—p. 53.
Physiology of True Optical View by Means of Stereoscopic Radiograph. E. G. Beck and E. Smith, Chicago.—p. 60.
Effect of Roentgen-Ray on Callus Formation in Ununited Fractures. E. A. Pohle, Cleveland.—p. 67.
Lymphosarcoma of Cecum; Case. T. S. Swan, Rochester, Minn.—p. 71.
Relation of Roentgen Ray to Newer Methods of Extraction. B. S. Gardner, Rochester, Minn.—p. 73.

Myeloid Myeloma.—Moore describes the bone changes found in chloroma of the myeloid type, or a myelocytoma, for which a unique roentgen-ray picture is claimed. Four cases are studied and contrasted, for which diverse radiologic findings are described, as distinctive from each other and from other diseases involving bone. They are likewise radiologically contrasted with an example of skeletal carcinosis. A varying blood picture and clinical course is presented in the four cases, along with differing histologic findings, which are claimed to be distinctive for four separate diseases. These cases are presented to establish the idea that there are four malignant tumors of the bone marrow, distinct from the leukemias and from the other malignant diseases involving bone, and that they are not sarcomatous, but hematogenetic.

Tennessee State Medical Association Journal, Nashville

18: 1-27 (May) 1925

Railway Surgery, a Specialty. E. T. Newell, Chattanooga.—p. 1.
Meddlesome Surgery. W. G. Kennon, Nashville.—p. 4.
Tryparsamide Treatment of Neurosyphilis. E. W. Cocke, Bolivar.—p. 7.
Ophthalmoscopic Examinations During Treatment with Tryparsamide. A. B. Dancy, Jackson.—p. 13.
Visceral Reflexes in Diagnosis. R. B. Wood, Knoxville.—p. 17.
Pneumothorax; Roentgenographically Considered. F. B. Bogart, Chattanooga.—p. 22.

Texas State Journal of Medicine, Fort Worth

21: 42-160 (June) 1925

Epitome of Organized Medicine; Purpose and Duty. M. F. Bledsoe, Port Arthur.—p. 51.
Medical Profession Needs More Publicity. J. E. Dildy, Brownwood.—p. 57.
Doctor's Wife as Citizen. Mrs. J. O. McReynolds, Dallas.—p. 60.

United States Naval Medical Bulletin, Washington, D. C.

23: 1-88 (July) 1925

Sinus Infections. C. B. Camerer.—p. 1.
Tuberculosis of Seminal Tract; Cases. E. M. Harris, Jr.—p. 10.
Epilepsy, Protein Sensitization Disease. L. H. Roddis.—p. 15.
What is a Normal Heart? Point of View of Medical Examiner. F. K. Soukup.—p. 18.
Leprosy at U. S. Naval Hospital, Great Lakes, Ill.; Case. P. Richmond, Jr.—p. 25.
Cerebral Abscess of Undetermined Etiology; Case. L. D. Carson.—p. 28.
Fractures of Head of Radius; Four Cases. W. S. Leavenworth.—p. 32.
Four-Point Method of Local Anesthesia for Hemorrhoidectomy. L. H. Williams.—p. 34.
Atypical Case of Serum Sickness. J. T. Boone.—p. 37.
Varicocele. J. L. Thornton.—p. 39.
Gold Ball Implantation After Removal of Eyeball. A. H. Cecha.—p. 40.
Case of Mumps with Cerebral Complications. F. D. Walker.—p. 42.
Mumps: Treatment. H. L. Fougerouase.—p. 43.

West Virginia Medical Journal, Huntington

20: 337-392 (July) 1925

Present Problem. G. D. Jeffers, Parksburg.—p. 337.
Problems of Gallbladder Disease Seen by Internists. J. Phillips, Cleveland.—p. 343.
Ethical Silence vs. Rational Publicity as Common Sense Medical Policy. J. R. Schultz, Charleston.—p. 349.
Puerperal Eclampsia. A. G. Rutherford, Welch.—p. 355.
Hypercalcium Saturation Therapy of Tuberculosis. C. H. Hall, Elkins.—p. 363.
Ethylene in Poor Risk Cases. J. E. Cannaday, Wheeling.—p. 371.

Wisconsin Medical Journal, Milwaukee

24: 57-115 (July) 1925

Suggested Analogy Between Hyperthyroidism and Gastric Ulcer. G. W. Crile, Cleveland.—p. 57.
Gastric and Duodenal Ulcers. E. S. Judd, Rochester, Minn.—p. 60.
Fistulae of Bladder. C. G. Richards, Kenosha, Ill.—p. 63.
Ureteral Stricture. E. A. Fletcher, W. M. Kearns and W. A. Leibeler, Milwaukee.—p. 66.
Value of Pyelogram. J. C. Sargent, Milwaukee.—p. 74.
Double Kidney with Calculi; Case. C. E. Smith and H. E. Kasten, Beloit.—p. 90.
Value of Public Health Nursing and Factors that Determine Its Value. C. A. Evans, Madison.—p. 91.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:1-46 (July 4) 1925

*Experiments on Cancer Producing Substances. E. L. Kennaway.—p. 1.
*New Flocculation Reaction for Serodiagnosis of Malignant Disease. H. J. B. Fry.—p. 4.
*Focal Sepsis as Cause of Neurasthenia and Insanity. P. Watson-Williams.—p. 9.
Aural Focal Sepsis as Source of Neurasthenia and Insanity. E. Watson-Williams.—p. 10.
*Focal Sepsis as Factor in Causation of Neurasthenia and Insanity. J. A. Nixon.—p. 11.
Focal Sepsis of Dental Origin Causing Mental Impairment. W. R. Ackland.—p. 12.
Disease of Anterior Ethmoid Cells as Cause of Optic and Retrobulbar Neuritis. J. A. Gibb.—p. 12.
*Arthritis Deformans. L. S. Ashcroft, L. Cunningham, T. P. McMurray and H. S. Pemberton.—p. 13.

Cancer Producing Substances.—Further experiments on the formation by heat of cancer producing materials are described by Kennaway. The nine products tested were obtained from the following sources at, approximately, the temperatures stated: acetylene (700, 800 and 900 C.); California petroleum (830 C.); isoprene (700 C.); Durham Holmside coal (450, 560 and 1,250 C.); human skin (290 C.); yeast (290 C.). It is stated that the pyrogenous materials derived from acetylene, isoprene, petroleum, yeast and skin produce cancer simply because they are all "irritants"; and that the multiplication in the laboratory of instances of "chronic irritation" is not required. To apply this to a substance, after it has been shown to produce cancer, the term "irritant" gives an appearance of explanation which is illusory. There seems to be a tendency at present to state that a substance such as soot gives rise to a cancer because it is an irritant, and at the same time tacitly to regard it simply as an irritant because it gives rise to cancer; this circular treatment of the matter is of no value at all. The irritation which causes the growth of cancer must be a special kind or must act on some special element in the tissues. No invariable relation has been found between the temperatures at which these various materials are formed and their comparative activity in producing tumors. Thus the three tars made from coal at 450 C., 560 C. and 1,250 C. show an ascending order of potency; the 820 C. isoprene tar is more active than the 700 C. tar; and experiments still in progress indicate that the 920 C. tar will prove more effectual than the 780 C. tar. In all these cases the higher temperature gives the more active product. But, on the other hand, in the case of acetylene, a low temperature (700 C.) gives a product more active than that produced at from 800 to 900 C. The idea suggests itself that acetylene may be a decomposition product common to coal, mineral oils, yeast, skin and isoprene, and that the cancer producing material obtained from these very diverse sources is actually formed from acetylene by the synthetic process discovered by Berthelot. Probably the yield of cancer producing substance depends largely on catalytic reactions which cannot as yet be controlled.

Serodiagnosis of Malignant Disease.—Fry found that extracts of cancer tissue used as antigen in complement fixation experiments often showed marked anticomplementary properties. It seems possible that a method, in the nature of a colloidal flocculation reaction, which dispenses with the hemolytic system, might prove of value. In the endeavor to find a satisfactory antigen, more than 200 preliminary experiments were carried out by Fry with cancer serums, using different extracts of tumor tissue. None of these antigens nor various combinations of them proved consistently satisfactory. Eventually Fry worked out a method which has given very good results. Breast carcinoma tissue is the antigen used. By this method 500 serums have been examined, comprising malignant and nonmalignant conditions, and 75 per cent. correct results were obtained. In 239 cases of malignant disease, positive flocculations were obtained in 71 per cent. In 261 controls, comprising healthy individuals, cases of nonmalignant neoplasms, medical and surgical conditions, a negative result was obtained in 78 per cent. Healthy individuals gave a uniformly negative reaction, except in one instance. Nonmalignant tumors usually gave a negative reaction. With acute febrile conditions—for example, tuberculosis or sepsis—positive flocculations may occur.

Focal Sepsis as Cause of Neurasthenia and Insanity.—Watson-Williams calls attention to sepsis as often the essential cause of functional psychoses, ranging from slight blunting of intellectual activity, through the more definite forms of abnormal taciturnity, inability to concentrate, unsociability and the varying syndrome of psychic abnormality grouped under the terms "neurasthenia" and "hypochondriasis," to the graver manifestations of unsoundness of mind accompanied by suicidal impulse, delusional insanity, mania and ultimately dementia praecox. He also lays stress on the import of the fact that the sepsis is most frequently what is conveniently termed "focal" and "latent" or "cryptogenic."

Chronic Sepsis Causes Mental Disturbance.—Nixon reports four cases in which chronic septic absorption appears to be a definite factor in causing mental disturbance. He thinks it probable that most of the cases of puerperal mania are septic in origin.

Arthritis Deformans.—A routine investigation has been made by Ashcroft and others of more than fifty cases of arthritis deformans. The joints have been opened in a large proportion of cases, and from them an organism has been recovered which is identical in every case in its cultural and biochemical features. This organism does not correspond to any organism which has previously been described in association with this or any other disease. In only one case has it been recovered from the synovial fluid; in all the others it has been isolated from either the membrane or articular bone. No lesions have as yet been produced in animals; so far only the intravenous inoculation of rabbits has been attempted. Nothing constant has been isolated from foci of sepsis, feces, urine, blood, or fasting stomach contents. Routine examinations have been made of gastric secretion, basal metabolism, acid-base ratio, renal and hepatic efficiency, and of glucose tolerance. The outstanding features, so far, appear to be: the large proportion of cases showing achlorhydria or hypochlorhydria, the practically universal diminution of carbohydrate tolerance, and the relative absence of acidosis, renal or liver defects, or of changes in the basal metabolic rate. The only routine treatment employed has consisted in the use of large amounts of 0.4 per cent. hydrochloric acid and a carbohydrate-free diet, extending over a period of months. Improvement—first by diminution of pain and then by increase of mobility—has been obtained in practically every case, even without the removal of focal sepsis.

Indian Medical Gazette, Calcutta

60:249-300 (June) 1925

*Abdominal Tuberculosis in Indian Practice. E. W. C. Bradfield.—p. 249.
Subperiosteal Excision of Joints. H. Hallilay.—p. 252.
*Disinfestation of Houses by Fumigation with Cresol. C. D. Tiwari.—p. 257.
Yaws (Frambesia) in Chin Hills. P. Bell.—p. 259.
Leper Island of Culion and Antileprosy Work in Philippine Islands. E. Muir.—p. 261.
Carrel's Treatment and Electrolytic Chlorin as Antiseptic. E. F. Neve.—p. 264.
*Treatment of Varicose Veins of Leg by Occlusion Method. D. R. Kehar.—p. 265.
*Diabetes and Insulin Treatment in Bengal. L. M. Ghosal.—p. 266.
Muscular Dystrophy, Pseudohypertrophic Type. J. B. Hance.—p. 270.
Vesical Calculus Formed Around an Inserted Foreign Body; Case. J. W. M. Nichell.—p. 271.
Large Scrotal Hernia Operated on Under Apothesine Anesthesia. S. G. Chavan and J. P. Arland.—p. 272.
Ankylosis of Knee Joint Cured by Excision. U. N. R. Chaudhuri.—p. 273.
Treatment of Tropical Ulcer. J. F. James.—p. 274.
Importance of Entomology to India. T. B. Fletcher.—p. 276.
Insects, Their Relation to Diseases of Man, Animals and Plants. S. K. Sen.—p. 277.
Man, Anopheles and Malaria Parasite in Relation to Faunas. S. R. Christophers.—p. 279.

Abdominal Tuberculosis in India.—Bradfield states that tuberculosis among cattle appears to be unknown in the Madras Presidency, and although no bacteriologic investigations have been made, it is more than probable that this absence of bovine tuberculosis influences the incidence and character of the disease in South India. Tuberculous diseases of bones and joints, though not so commonly seen as in European hospitals, pursues a much more intractable course and is less amenable to nonoperative forms of treatment. The economic problems of India and the ignorance of the people of the hospital class are contributory factors, but multiple lesions are more common and the surgical forms of tuberculosis are more frequently complicated by the presence of lesions in the lungs. Abdominal tuberculosis occurs in very much higher percentage than is found in European general hospitals. Among 205 hospital tuberculosis cases referred to, ninety-five were cases of abdominal tuberculosis. Surgical forms of tuberculosis constituted 2.1 per cent. of the total admissions.

Disinfestation by Fumigation with Cresol.—The method of disinfestation of houses for plague in vogue in the Punjab since 1915 is by vaporizing commercial cresol on smouldering cowdung cakes. An inquiry on the efficacy of this procedure was undertaken by Lal and Tiwari. To make the disinfestation by cresol effective they recommend the use of 10 ounces of cresol in an ordinary room of 1,000 cubic feet capacity. It is necessary to seal the room carefully before fumigation, and to keep it closed for four hours afterward. It is expedient to wash the floor with a disinfectant solution after the fumigation is over.

Treatment of Varicose Veins.—Kehar picks up the varicosed vein, along with the skin, from the underlying structures with forceps. Then a needle, threaded with strong No. 5 silk thread ligature, is passed underneath the vein and the ends of the thread are tied over it. In this way sutures are applied to the vein from above downward, the sutures being from one-half inch to three-quarters inch apart. The patient is then returned to bed. The veins begin to shrivel up in from seven to ten days and get completely shrivelled up in about three weeks. About ten days after the operation, alternate sutures, beginning at the second suture from the top, are removed and the rest in about three weeks. This method is said to be very useful in the treatment of varicose ulcers as the shrivelling up of the veins relieves the skin over them of their constant pressure and allows the establishment of free circulation of blood.

Value of Insulin Treatment of Diabetes in Bengal.—Not much benefit has accrued from insulin treatment of diabetes in Bengal. In many instances in Ghosal's experience and that of others, no benefit at all has been derived either in reducing blood sugar or urinary sugar even with strict dietetic and other regulations.

Indian Medical Record, Calcutta

45: 161-190 (June) 1925

Infected Ice-Cream. S. N. De.—p. 161.
Testes as Endocrine Organ in Ayurveda. A. Roy.—p. 162.

Medical Journal of Australia, Sydney

1: 582-612 (June 6) 1925

Cancer and Acquired Resistance to Tuberculosis. T. Cherry.—p. 582.
Hirschsprung's Disease; Cases. R. B. Wade.—p. 598.

1: 613-640 (June 13) 1925

Standardized and Progressive Surgery. H. B. Devine.—p. 613.
Relation of Neurasthenia and Anxiety Neurosis to Manic-Depressive Syndrome. J. MacPherson.—p. 618.
Intussusception Followed by Volvulus. J. H. W. Leadley.—p. 624.
*Sarcoma of Kidney. R. G. Craig.—p. 625.
*Malignant Disease of Kidney. J. S. Davis.—p. 625.

Sarcoma of Kidney in Child.—Craig reports a case of sarcoma of the kidney occurring in a child, aged 12 months. The tumor was easily palpable. A nephrectomy was performed. The child survived the operation and was alive and well at the time of this report made two weeks later.

Malignant Tumor of Kidney.—The tumor in Davis' case was removed from a child of 15 months. Its exact nature could not be determined. All kidney tissue had disappeared. The tissue elements and their arrangement suggested an epithelial origin of the tumor. It had no resemblance to a Grawitz or a Wilms' tumor.

Bruxelles-Médical, Brussels

5: 994-1022 (May 31) 1925

*Postencephalitic Parkinsonian Syndromes. P. Enderle.—p. 994.
Eye Disturbances with Gastro-Intestinal Disease. Van Lint.—p. 1002.
Surgical Treatment of Uterine Fibroma. L. Mayer.—p. 1005.

Postencephalitic Parkinsonian Syndromes.—Enderle describes his five cases in detail, summarizing the different treatments suggested by others. He states that sodium salicylate, given by mouth or by vein, has sometimes produced good immediate results. Certain patients improved under intraspinal injections of autoserum. Similar injections of encephalitic virus-vaccine sometimes seemed to check the further development, and even cause regression of the syndrome.

Bulletin de l'Académie de Médecine, Paris

93: 605-630 (June 2) 1925

Intentional Exposure to Measles. Armaingaud.—p. 607.
Prevention of Kleptomania. Antheaume.—p. 610.
Acridin Compound in Treatment of Gonorrhea. Jausion et al.—p. 618.
Physiology of the Middle Ear. A. Bonain.—p. 627.

93: 671-694 (June 16) 1925

Diastases and Vitamins in Wheat Hull. Pouchet.—p. 679.
*Vaccination Against Tuberculosis. A. Calmette et al.—p. 681.
Sanocrysin Treatment of Tuberculosis. L. Bernard.—p. 689.
*Dropsy from Thyroid Deficiency. J. C. Mussio Fournier.—p. 691.

Attempts to Ward Off Tuberculosis from Man and Animals.—Summarized on page beyond as published elsewhere.

Dropsy Syndrome from Thyroid Insufficiency.—Mussio Fournier observed four cases of attenuated myxedema with edema, ascites, and, in two instances, with hydrothorax. The patients were all women, aged from 25 to 44, without any organic affection to explain the extensive effusion. Thyroid treatment induced pronounced diuresis. The treatment, continued from two to five weeks, resulted in disappearance of the thyroid insufficiency and of the dropsy phenomena. This was noted also in one of the patients who presented albumin and casts in the urine. It is possible that a disturbed functioning of certain endocrine glands or of the vegetative system, connected with the thyroid deficiency, had induced the dropsy. The endocrine deficiency may in certain cases induce a veritable nephritis, as occurred in this one patient. It subsided under the thyroid treatment.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 885-907 (June 12) 1925

*Immunization with Diphtheria Anatoxin. L. Martin et al.—p. 885.
*Insulin Treatment of Leg Ulcers. Faure-Beaulieu and David.—p. 892.
The Pachon Oscillometer with Obliteration of Arteries. H. Vaquez et al.—p. 895.
*Treatment of General Paralysis. A. Marie.—p. 898.
Case of Kala-Azar in Adult. E. Burnet and F. Masselot.—p. 899.
*Trophic Action of Insulin. L. Ambard and F. Schmid.—p. 904.

Results of Vaccination with Diphtheria Anatoxin in Institutions.—Martin, Loiseau and Laffaille made 1,297 inoculations with diphtheria anatoxin mostly in schools and asylums. About 275 children, aged from 5 to 18, were vaccinated when no cases of diphtheria had occurred in the institution. Two injections (0.5 and 1 c.c.) were given at an interval of from fifteen to twenty-two days. The Schick test in 231 of these children, twenty-one to twenty-nine days after the second injection, elicited a negative reaction in 96.1 per cent. and a positive in 3.89 per cent. In another institution, after the occurrence of a case of diphtheria, 163 children were vaccinated twice with a sixteen day interval (0.5 and 1 c.c.) and the Schick test, applied twenty-three days afterward, was negative in 80 per cent., and positive in 19 per cent. After the third injection of anatoxin, given twenty-three days after the second, a positive Schick reaction still persisted in only one. With an established epidemic in which preventive treatment with diphtheria antitoxin had failed, the 45 children in the asylum were twice vaccinated with anatoxin (0.5 and 1 c.c. at twenty-one days interval). No cases of diphtheria developed afterward. In a school with endemic diphtheria, 35 children were given three injections, 14 two, and 24 one injection. A febrile reaction was noted in 2 cases (twelve hours); in 8 an extensive redness and pain in the injection area; in 11 only redness. The children seemed to bear the injections well. A subsequent Schick test is not necessary for children, as with three injections immunization seems to be certain. The sensitiveness to the anatoxin is more pronounced in adults; therefore the vaccination should be made only in those adults with a positive Schick reaction. A fifteen days' and, if possible, a twenty-one days' interval between the injections is advisable.

Insulin in Treatment of Leg Ulcer.—Ten of Faure-Beaulieu and David's patients with leg ulcers presented hyperglycemia, while no sugar was detected in the urine. They were treated with insulin, at a dose of 10 units injected subcutaneously twice a day. In one case the total amount of insulin was 1,600 units; usually, about 500 units. One woman with an ulcer, 11 by 7 cm. in size, and glycemia of 2.12 gm., was cured in two months. She was given 480 units of insulin. A similar ulcer the year before took seven months to heal. Another woman with an ulcer, 7 by 9 cm. and glycemia of 2.41 gm. was completely cured in one month (320 units). One syphilitic woman had had a large and very painful ulcer for four years, rebellious to specific treatment. After two months' injections of insulin, the ulcer, 14 by 10 cm., was reduced by a half. The glycemia in this woman was 2.16 gm. per liter.

Relapsing Fever Treatment of General Paralysis.—Marie reports that in 120 patients with general paralysis treated with injections of tuberculin, milk or nucleinate, associated with bismuth, a remission occurred in 50 per cent. of the cases, persisting for three years to date. In the 100 submitted to malaria treatment, a remission was noted in 5 per cent., and improvement in 15 per cent. Inoculations of relapsing fever spirochetes, tried the last three months, induced remissions in nine out of fifteen patients. None of them have died since, while with the malaria treatment, the mortality was 15 per cent., and with the other fever-producing treatments from 8 to 10 per cent. The disease is not cured, but stabilized.

Effect of Local Application of Insulin on Ulcers of Nondiabetic Origin.—Ambard and Schmid describe a case in a woman, aged 67, with an apparently tuberculous skin lesion on one foot, which developed into a deep and large ulcer (20 by 20 cm.) of the infectious type. As various measures, used during five months did not prove successful, wet dressings with insulin were tried (12 units twice a day). No changes were noted the first twelve days; then granulations appeared, followed by complete healing in about ten days. In other cases small ulcers healed in a week, after other measures had failed. Only in one case out of fourteen the insulin was without results. In the beginning the insulin was given subcutaneously, afterward the wound was powdered with it. The action is ascribed to an exaggerated cellular activity of the tissues from stimulation of the carbohydrate metabolism.

Comptes Rendus de la Société de Biologie, Paris

92: 1409-1480 (May 29) 1925. Partial Index

*Sedimentation Speed and Cholesterolemia. Salomon et al.—p. 1410.
*Origin of Epinephrin. R. Arnold and P. Gley.—p. 1413.
*Action of Creatin on Epinephrin. R. Arnold and P. Gley.—p. 1415.
Formation of Gum by Bacteria. A. Fernbach et al.—p. 1418.
*Peptone and Phagocytosis. B. Erber.—p. 1422.
*Acid-Base Balance in Epilepsy. R. Rafflin.—p. 1429.
"Diphtheria Anatoxin." G. Ramon.—p. 1432.
Biology of Mumps Spirochete. Y. Kermorgant.—p. 1434.
Sodium Chlorid in Ion Interchanges. Mestrezat and Garreau.—p. 1439.
*Action of Bile on Bacteriophage. G. Calalb.—p. 1442.
*Shock in Gravid Rabbits. P. Simonin and L. Fernier.—p. 1447.
*Follicle Phase and the Suprarenals. J. Watrin.—p. 1451.
Blood Platelets in Scarlet Fever. O. T. Bonciu.—p. 1453.
*Tissue Ferments in Avitaminosis. S. and A. L. Draganesco.—p. 1470.
*Cinchophen in Jaundice. H. Slobosiano and P. Herscovici.—p. 1472.

Sedimentation Speed of Blood Corpuscles Does Not Depend on Cholesterolemia.—Salomon, de Potter and Valtis' research on fifty-nine subjects showed that in grave tuberculosis the amount of cholesterol in the blood is decreased, while sedimentation is accelerated. In normal persons, with a high cholesterol content, sedimentation is retarded; in pregnant women, the normal as well as the tuberculous, hypercholesterolemia is associated with an increased speed. Evidently acceleration of sedimentation is not connected with the cholesterol content in the blood.

Action of Certain Substances on Epinephrin Formation.—Arnold and Gley treated suprarenal tissue with tyrosin, phenylalanin, dioxyphenylalanin, tyramin and inosite. None of these substances seemed to influence the formation of epinephrin in the suprarenal capsules. Their ten experiments on rabbits demonstrated that the vasoconstrictor action of epinephrin may be sometimes enhanced by adding to it creatin or creatinin.

Influence of Peptone on Phagocytosis of Trypanosoma and Diphtheria Bacillus.—Erber introduced blood containing trypanosomes into the lymph of frogs, previously injected with peptone. Under the influence of the peptone, phagocytosis occurred more slowly, and the delay was the more pronounced, the larger the dose of the peptone. An identical phenomenon was observed with the diphtheria bacillus.

Rôle of Ammonia and Acidity in Epilepsy.—Rafflin's conclusion is that alkalosis may contribute to the onset of an epileptic seizure. Mere disturbance of the acid-base balance cannot be incriminated alone. Such disturbances occur often in the free intervals, without apparent harm.

Action of Bile on the Bacteriophage.—Calalb states that even a small quantity of ox bile inhibits the lysant property of the bacteriophage, without destroying it. This may explain the fact that in typhoid fever and in typhoid carriers the bacilli linger longest in the gallbladder.

Anaphylactic Shock in Gravid Rabbits.—Simonin and Fernier's observation showed that anaphylactic shock can be induced in a gravid rabbit, and that gestation does not modify either the character or the intensity of the shock. The latter may disturb the gestation, but does not seem to affect the young in the uterus.

Effect of Follicle Phase on Suprarenal Capsules.—Watrin injected the follicle fluid (liquor folliculi) from cows into the peritoneal cavity of guinea-pigs and rats under the puberty age. This was followed only by a minimum reaction in the suprarenal glands. Evidently the capsules do not respond to ovulation.

Ferments in Tissues of Pigeons with Vitamin Deficiency.—S. and A. L. Draganesco noted that neither the amylase in the extracts of organs, nor the trypsin of the pancreas was modified in a pigeon on a vitamin deficient diet. The amount of the ferments secreted was normal.

Cinchophen in Treatment of Jaundice in the New-Born.—Six infants were given daily 0.1 gm. of cinchophen with 2 gm. of sugar by mouth; six, the same dose without sugar; in three cases 0.1 gm. of cinchophen was used twice a day in an enema. Observation during the first twelve days showed that cinchophen with sugar constantly reduced the content of bilirubin in the blood. Cinchophen without sugar was often vomited, and therefore without effect. Given in an enema, it did not remain long enough, and thus the results were insignificant.

Journal de Médecine de Lyon

6: 287-312 (May 20) 1925

*Autohemotherapy in Chancroid Buboes. Nicolas and Lacassagne.—p. 287.
*Colitis Due to Arsphenamin Poisoning. Bonnet and Bouvier.—p. 295.
*Diagnostic Value of Giant Cells in Syphilis. Favre and Manhès.—p. 299.
Test Treatment for Syphilis. G. Massia and M. Pillon.—p. 303.

Own Blood Treatment for Chancroid Adenitis.—In eleven of Nicolas and Lacassagne's fourteen cases the inflammation of the lymph glands subsided under the treatment. The pain was relieved after each injection, sometimes in fifteen minutes, usually within several hours. A simultaneous reduction of the inflammation occurred, also resorption of pus in the suppurated glands. Five or six injections were needed; in one case three injections brought about complete recovery. The 5 c.c. of blood withdrawn was immediately injected in the muscles of the thigh in the first injection; 10 c.c. was used in the successive injections, given at two or four day intervals. The treatment succeeded in chancroid adenitis of staphylococcic origin; it failed in that caused by Ducrey's bacillus itself. It is probable that the autohemotherapy acts by inducing a hemoclastic shock.

Ulcerous Colitis from Neo-Arsphenamin.—In Bonnet's patient, a syphilitic woman, aged 31, the phenomena appeared after the fourth injection of the third series. Two previous series of neo-arsphenamin injections, given within five years, had been well tolerated by the patient. Death occurred two months after the last injection. Necropsy revealed extensive ulcerative colitis with perforations and purulent peritonitis, undoubtedly the result of toxic action from the arsenical.

Syphilis of the Face.—Favre and Manhès observed a syphilitic affection of the face, presenting an extremely hard infiltrate of lymphodermia type. Histologic examination showed epithelioid and giant cells in the tissue, suggesting the diagnosis of tuberculosis. Seroreactions and tentative specific treatment established the existence of syphilis. They point to the fact that the presence of giant cells has no positive diagnostic value.

Journal d'Urologie Médicale et Chirurgicale, Paris

19: 377-472 (May) 1925

Treatment of Impermeable Urethra Stricture. P. Bazy —p. 377.
Diagnosis of Latent Gonococcus Infection. Nogués and Durupt.—p. 379.
Prostatectomy by Both Hypogastric and Perineal Routes. X. Delore et al.—p. 398.
Intravesical Prolapse of Ureter. O. Mercier.—p. 402.
Pseudogonococcus Urethritis. M. Moran.—p. 428.
Metal Laveur-Irrigator. L. Boulanger.—p. 432
Catheter with Flexible Metal in Wall. L. Boulanger.—p. 437.

Néoplasmes, Paris

3: 193-240 (Oct.) 1924

*Deep Roentgen-Ray Treatment of Myxoma. G. Bolognesi —p. 193.
*Metastasis in Pleura and Lung of Cancer of Breast. Delbet.—p. 202.
The Serum After Deep Roentgen Treatment. Roffo and Correa.—p. 211.
Influence of Ions on Respiration of Cells. A. H. Roffo and S. M. Neuschloss.—p. 225.
*Sarcoma in Fish. A. H. Roffo.—p 231.

Deep Radiotherapy for Myxomas.—Bolognesi's patient had had several recurrences of the tumor of the pure myxoma type. Then the recurrence was given a course of deep radiotherapy, which aggravated conditions, and sarcomatous degeneration followed.

Recurrence in Lung or Pleura After Mammectomy for Cancer.—Delbet has had this occur in a third of his nine known instances of recurrence in 115 operative cases of cancer of the breast. The recurrences in pleura or lung often develop rapidly, regardless of the structure of the tumor. He seeks now to avoid this new complication of mammary cancer by inducing a profuse serous discharge by introducing several layers of gauze between the skin flaps and the deep wall of the wound, after removal in one mass of the breast and connected glands. He supplements this with deep roentgen exposures, but applies the rays only tangentially, not allowing them to act directly on lungs or pleura.

Sarcomas in Fishes.—Roffo describes a peculiar spindle-cell sarcoma found in a fish, *Carassius auratus.* Seven of the twenty fish in the tank became affected in turn. The diseased fish were removed and the tank disinfected, after which no tumors developed.

Nourrisson, Paris

13: 141-220 (May) 1925

Congenital *Debility.* A. B. Marfan.—p. 141.
Feeding in Infectious Diseases of Infants. L. Ribadeau-Dumas and Fouët.—p. 156.
Lactation and Glycemia. Banu and Heresco.—p. 166.
*Benzoin Reaction in Young Children. P. J. Ménard.—p. 171.
Blood Transfusion in Infants. J. Debray.—p. 184.

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Paris Médical

55: 573-588 (June 27) 1925

*Etiology of Epidemic Encephalitis and Herpes. C. Levaditi.—p. 573.
*Incubation in Meningococcus Sepsis. P. *Fontanel.*—p. 587.

Common Origin of Epidemic Encephalitis and Herpes.—Levaditi points to the experiments on monkeys and rabbits confirming that the herpes-causing virus and that of epidemic encephalitis belong to the same group. The more frequent occurrence of herpes is explained by the fact that the skin, as well as the mucous membranes and cornea present a higher receptivity to the virus than the cerebrospinal axis. The virus may invade the nervous system at a time when its natural and hereditary immunity is at a low ebb, especially from intestinal infections. Another factor in the localization may be the contamination by a species of the virus having a special affinity for the nervous tissue.

Incubation Stage in Meningococcemia.—Fontanel thinks that the infection may take place by the nasopharynx or by the intestine and their corresponding lymph vessels. The cocci may grow in the organs and subsequently pass into the blood at one time or at intervals, thus causing the fulminating or the intermittent forms of meningococcemia. The digestive tract may remain intact since the cocci are carried off with the mucus, refractory to the ferments. Therefore, according to Besredka's theory and practice in preventive local vaccination, not only the cells of the pharyngeal mucosa should be considered, but also the intestinal cells.

Presse Médicale, Paris

33: 825-840 (June 20) 1925

*Preventive Vaccination Against Tuberculosis. Calmette et al.—p. 825.
*Differentiation of Splenic Anemias. C. Aubertin.—p. 826.
*Vaccine and Serotherapy in Bronchopneumonia. A. Dufourt.—p. 829.

Vaccination Against Tuberculous Infection.—Calmette and his co-workers summarize the results from their BCG bacillus vaccine. Within thirteen years 230 successive cultures of a virulent strain of bovine tubercle bacilli had been made in an alkaline medium with ox bile. Thus the bacilli were deprived of their tubercle-producing property, but they still preserved the toxicity for the tuberculous organism, and they secrete a tuberculin which induces production of antibodies the same as ordinary bacilli. Among the 423 newly born vaccinated with it, more than six months ago, 32.6 per cent. were left exposed to contamination (tuberculous mother in eighty-six cases). None of those vaccinated in 1922 have died, and only 0.5 per cent. among those vaccinated in 1924 have died from presumed tuberculosis. This vaccination has proved entirely harmless for all the infants vaccinated more than three years ago, and, at least for the protection of young infants, its efficacy seems well established, both clinically and experimentally. (One of their previous communications was summarized Aug. 9, 1924, p. 411.)

Indications for Splenectomy in Anemia.—Aubertin maintains that in splenomegaly with leukocytosis and intense *myeloid reaction,* splenectomy is contraindicated, as also in myeloid leukemia. The operation is advisable in splenomegaly with leukopenia and mononucleosis, since it exerts a favorable action, and sometimes a definite one on the anemia. This may be observed in Banti's disease, also in hemolytic splenic anemia and malaria splenic anemia.

Vaccine and Serum Treatment in Bronchopneumonia of Children.—Dufourt's research on 100 cases demonstrated that the disease is usually caused by the pneumococcus and enterococcus, frequently associated. The streptococcus was found in one or two out of ten cases, and almost always in secondary bronchopneumonia. He used a vaccine containing the pneumococcus, enterococcus, staphylococcus and the tetragenus The vaccine was used alone in 80 per cent. of all the cases. A dose of 0.25 or 0.50 c.c. was injected the first day in infants and young children; the second day 0.33 c.c. or 0.50 c.c.; the third 0.5 or 1 c.c. Daily injections of 1 c.c. were continued until fever and grave functional signs subsided. In older children and in adults a double dose was given. An improvement of local and general phenomena occurred after three or four injections. If five or six vaccine injections failed, then antistreptococcic serum was tried in a dose of 30 c.c. in infants and 60 c.c. in children. In bronchopneumonia caused by streptococci, improvement under the serum appeared the third day; the injections were repeated daily, until definite disappearance of the infection.

33: 841-856 (June 24) 1925

*Roentgen Rays in Gastric Disease. R. Bensaude et al.—p. 841.
The Acid-Base Balance. III. F. Coste.—p. 844.

Roentgen-Ray Treatment in Gastric Affections of Noncancerous Origin.—Under the influence of the rays, Bensaude, Solomon and Oury noted a considerable decrease of the acidity in 55 per cent. of their eleven patients; a slight decrease in 25 per cent.; in 20 per cent. the acidity did not change. This occurred after from eleven to sixteen exposures, rarely after from three to seven. A dose of 2.5 H units was used in one exposure, given once or twice a week. Reduction of the pepsin was slower than that of the acidity. Obviously, the roentgen-ray treatment proves most successful in cases of hyperpepsia with hyperchlorhydria. The effect of the roentgen rays persisted for several weeks, and the treatment was repeated after several weeks or months. In 44 per cent. of the cases the rays did not relieve the gastric pains; in 21 per cent. a partial amelioration was noted; in 35 per cent. there was considerable improvement. This occurred after ten to fourteen exposures; rarely after six or seven. The roentgen ray evidently exerted an action on the motor function of the stomach, since pyloric spasm subsided completely. The treatment seemed to relieve in particular the pains following gastro-enterostomy. Four irradiations induced a rapid and definite disappearance of the postsurgical pains in their one personal case.

Progrès Médical, Paris

786-856 (May 30) 1925

*Infectious Nature of Multiple Sclerosis. T. Alajouanine.—p. 794.
Antishock Treatment in Psychoses. H. Claude et al.—p. 796.
Influence of Charcot on Freud. H. Codet and R. Laforgue.—p. 801.
Fate of Iodized Oil in Cerebrospinal Fluid. J. Forestier.—p. 802.
Cases of Osteitis Fibrosa Cystica. *Léri and Ruppe*.—p. 808.
*Syphilis of Corpus Striatum. J. Lhermitte.—p. 817.
Compensation in Mental Debility. P. Merklen.—p. 825.
Multiple Sclerosis and Syphilis. A. Sézary.—p. 829.
Intracranial Hypertension. Vincent and de Martel.—p. 835.

Infectious Origin of Multiple Sclerosis.—In Alajouanine's ase, in a woman, aged 30, the disease started with signs of n acute infection, resembling epidemic encephalitis. It eveloped, after two months, into multiple sclerosis, with ubsequent ascending myelitis, followed by death from bulbar henomena. There was no meningeal reaction and no visceral esions. The indications are for intramuscular or intraveous injections of sodium salicylate, quinin, or other drugs o combat the assumed infectious cause of the disease.

Syndrome from Syphilis of Corpus Striatum.—Lhermitte eports a case of typical parkinsonian syndrome, and a case esembling paralysis agitans, caused by localization of the yphilitic virus in the corpus striatum. Involvement of cerain parts of the striate body may induce a pseudobulbar yndrome, or the rigidity syndrome *in arteriosclerosis*. He alls this pathologic group primary syphilitic striatitis.

Revue de Chirurgie, Paris

63: 321-404 (May) 1925

Chronic Nontuberculous Hip Joint Disease in Adults. Duguet and Clavelin.—p. 321.
Treatment of Chronic Intestinal Stasis. Dunet and Peycelon.—p. 373.

Revue Française d'Endocrinologie, Paris

3: 89-144 (April) 1925

Rôle of Nervous System in Metabolism. A. Oswald.—p. 89.
Ovarian Hormones. R. Courrier.—p. 94.
The Cortex of the Suprarenal Gland. R. Porak.—p. 102.
Relation Between Asthma and Ovarian Disturbances. F. Claude and H. Saleur.—p. 115.
Action of Pituitary on Metabolism. D. M. Rossiysky.—p. 124.

Revue de Médecine, Paris

42: 161-240, 1925

Surgical Indications *with Chronic* Intestinal Stasis. G. Lardennois.—p. 161.
*Subacute Venous Septicemia. C. Legrand.—p. 169.
Relations Between Hemoglobinuria, Hematuria, Purpura and Jaundice in First Invasion of Malaria. Trabaud.—p. 179.

Subacute Venous Septicemia.—The special features of this tenacious affection are the primary and persistent localization in the venous system, and the spread throughout the organism of the relatively benign process. In the case described it *seems to have died out, after a fifteen months' course*, but the contractures, atrophy and disability still persist to some extent, a year later, in the lower part of the body; the arms have quite recuperated. Sedatives to act on the sympathetic system and opium for the convulsions proved useful, but the greatest benefit on the heart complications, and even on the venous process, was derived from treatment of the digestive tract (calomel, castor oil, lavage of the bowels). There were from five to ten waves of exacerbation in the cases on record and the duration ranged from four to fifteen months or even three years in L. Blum's case. *Pains in the legs of the woman of 45, in the case reported, were the first symptoms*, and a little edema at the ankles. Then the axillae became painful, and other symptoms developed indicating irritation of the sympathetic and of the nervous system in the neck and head, with transient involvement of some lung veins, with slight hemoptysis once. It seems wise to wait for twenty days after subsidence of the pain and fever in a region before attempting gentle mobilization—regardless of conditions elsewhere. Legrand did not succeed in cultivating germs from the blood. Endocrine derangement and insufficiency of liver and kidneys may be predisposing factors, but the whole clinical picture suggests an analogy in the veins of endocarditis lenta in the heart.

Schweizerische medizinische Wochenschrift, Basel

55: 529-548 (June 4) 1925

*Diagnosis of Scarlet Fever. G. Fanconi.—p. 529.
*Diet in Gastric Ulcer. A. Jarotzky.—p. 535.
*Blood Changes After Injection of Emanation. Kotzareff.—p. 537.
*Treatment in High Altitudes. J. H. Hirschfeld.—p. 540.

Diagnosis of Scarlet Fever.—Fanconi failed in his attempts to obtain a specific reaction with intracutaneous injections of streptococcus suspensions, but confirms the usefulness of the Dick test. He believes with Szontagh that scarlet fever is an anaphylactic reaction to various agents.

Diet in Gastric Ulcer.—Jarotzky reprints his diet published in 1910, and based on physiologic experiments. The white of egg, if given without salt, produces no gastric secretion. He adds at another time of the day unsalted butter. The patient has to stay in bed and is given increasing doses of white of eggs (from 1 to 10) in the morning and of butter (20-180 gm.) in the afternoon. No fluids or salt are allowed. After ten days, gruels without salt are added.

Blood Changes After Injection of Emanation.—Kotzareff describes the changes of the formed and fluid elements of the blood in rabbits and guinea-pigs. An intracutaneous injection of even 16.5 millicuries produced no grave lesions. Only sterility lasting ten months and followed by abortion was noted.

Treatment in High Altitudes.—Hirschfeld attributes to the low tension of oxygen the most important therapeutic action of high altitudes. He advises to add gymnastics to increase its value.

Archivio Italiano di Chirurgia, Bologna

11: 229-332 (April) 1925

Primary Epithelioma of the Submaxillary Gland. Agrifoglio.—p. 229.
Muscle and Fat Transplants in Wounds of the Lungs. C. Rossi.—p. 245.
*Surgical Treatment of Syphilis of Stomach. A. Pollidori.—p. 273.
Hernia of the Appendix. G. Carisi.—p. 283.

Surgical Treatment of Syphilis of the Stomach.—Pollidori describes a case in which three years of treatment for the syphilis had not modified the gastric lesions to any extent. Gastro-enterostomy relieved the digestive disturbances, and on renewed specific treatment all disturbances subsided and the patient has been in good health during the year or more since. *No attempt was made to remove the infiltrated portions of the stomach wall.* He compares with this case the similar ones on record. In 1907, Pater had compiled 122 cases of syphilis of the stomach, and Meyers added fifty-eight more in 1912.

Ulcerous Colitis from Neo-Arsphenamin.—In Bonnet's patient, a syphilitic woman, aged 31, the phenomena appeared after the fourth injection of the third series. Two previous series of neo-arsphenamin injections, given within five years, had been well tolerated by the patient. Death occurred two months after the last injection. Necropsy revealed extensive ulcerative colitis with perforations and purulent peritonitis, undoubtedly the result of toxic action from the arsenical.

Syphilis of the Face.—Favre and Manhès observed a syphilitic affection of the face, presenting an extremely hard infiltrate of lymphodermia type. Histologic examination showed epithelioid and giant cells in the tissue, suggesting the diagnosis of tuberculosis. Seroreactions and tentative specific treatment established the existence of syphilis. They point to the fact that the presence of giant cells has no positive diagnostic value.

Journal d'Urologie Médicale et Chirurgicale, Paris

19: 377-472 (May) 1925

Treatment of Impermeable Urethra Stricture. P. Bazy.—p. 377.
Diagnosis of Latent Gonococcus Infection. Noguès and Durupt.—p. 379.
Prostatectomy by Both Hypogastric and Perineal Routes. X. Delore et al.—p. 398.
Intravesical Prolapse of Ureter. O. Mercier.—p. 402.
Pseudogonococcus Urethritis. M. Moran.—p. 428.
Metal Laveur-Irrigator. L. Boulanger.—p. 432.
Catheter with Flexible Metal in Wall. L. Boulanger.—p. 437.

Néoplasmes, Paris

3: 193-240 (Oct.) 1924

*Deep Rœntgen-Ray Treatment of Myxoma. G. Bolognesi.—p. 193.
*Metastasis in Pleura and Lung of Cancer of Breast. Delbet.—p. 202.
The Serum After Deep Rœntgen Treatment. Roffo and Correa.—p. 211.
Influence of Ions on Respiration of Cells. A. H. Roffo and S. M. Neuschloss.—p. 225.
*Sarcoma in Fish. A. H. Roffo.—p. 231.

Deep Radiotherapy for Myxomas.—Bolognesi's patient had had several recurrences of the tumor of the pure myxoma type. Then the recurrence was given a course of deep radiotherapy, which aggravated conditions, and sarcomatous degeneration followed.

Recurrence in Lung or Pleura After Mammectomy for Cancer.—Delbet has had this occur in a third of his nine known instances of recurrence in 115 operative cases of cancer of the breast. The recurrences in pleura or lung often develop rapidly, regardless of the structure of the tumor. He seeks now to avoid this new complication of mammary cancer by inducing a profuse serous discharge by introducing several layers of gauze between the skin flaps and the deep wall of the wound, after removal in one mass of the breast and connected glands. He supplements this with deep roentgen exposures, but applies the rays only tangentially, not allowing them to act directly on lungs or pleura.

Sarcomas in Fishes.—Roffo describes a peculiar spindle-cell sarcoma found in a fish, *Carassius auratus.* Seven of the twenty fish in the tank became affected in turn. The diseased fish were removed and the tank disinfected, after which no tumors developed.

Nourrisson, Paris

13: 141-220 (May) 1925

Congenital Debility. A. B. Marfan.—p. 141.
Feeding in Infectious Diseases of Infants. L. Ribadeau-Dumas and Fouët.—p. 156.
Lactation and Glycemia. Banu and Heresco.—p. 166.
*Benzoin Reaction in Young Children. P. J. Ménard.—p. 171.
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Etiology of Scrofulous Inflammations of the Eyes.—While knowledging the allergic (usually tuberculous) basis of lyctenular inflammations, Löwenstein emphasizes the lack vitamins as a provoking cause. Recurrences can be pre- nted only by giving cod liver oil and fresh vegetables.

Diagnosis of Measles.—Steinert observed Koplik's spots on e nasal mucous membrane in three children.

Fluorin Poisoning.—Dyrenfurth and Kipper report a case f fatal poisoning with a fluorin compound. The initial omiting and rapidly increasing weakness of the heart and specially the possibility of a poisoning with a vermin xterminator should arouse suspicion. Similar to the treatment of poisoning with oxalic acid, the stomach should be insed out with lime water, the patient should drink abundantly of it, and calcium chlorid should be injected. The atal dose for cats was about 0.5 gm. of sodium fluorid per ilogram.

Angina Pectoris, Fever and Partial Aneurysm of Heart.—Hanser emphasizes the significance of slight fever following attacks of angina pectoris. He believes that it is due to infarction of the heart muscle.

Significance of Urochromogen.—Weiss reviews the technic and results of his urochromogen reaction. He dilutes the urine threefold and adds 3 drops of a 0.1 per cent. solution of potassium permanganate to half a test tube. If the urine contains much urobilin, uro-erythrin or bilirubin, he adds 20 gm. of ammonium sulphate to 25 c.c. of urine, and uses the filtrate. A canary yellow color indicates an unusual amount of urochromogen. It is an endogenous product of cleavage of proteins, and contains sulphur. Large amounts are eliminated in typhoid and typhus, measles, scarlet fever and grave tuberculosis. Pneumonia, polyarthritis, influenza and epidemic meningitis do not increase the elimination of urochromogen. The test is simpler than the diazo test.

21: 877-914 (June 12) 1925

Modern Psychotherapy. A. Moll.—p. 877.
Stretching of the Esophagus. L. Nelken and H. Strauss.—p. 882.
*Nonspecific Injections. B. Epstein and F. Heller.—p. 884.
Stenosis of the Cecum and Hyperchromic Anemia. J. Kretz.—p. 886.
Treatment of Whooping Cough. F. Frank and I. Glaser.—p. 888.
*Treatment of Intestinal Fistulas. K. Fecher.—p. 890.
*Dispensary for Lung Affections. K. Peyrer.—p. 891.
A Caramel Reaction for Glucose. P. Ziegelroth.—p. 893.
Endocrines and Gastric Ulcer. F. Boenheim.—p. 895.
Mathematic Characterization of Leukocyte Reactions. Habetin.—p. 896.
Legislation on Abortion. F. Riss.—p. 912.

Biologic Reaction After Nonspecific Injections.—Epstein and Heller found the allergic reaction to injections of foreign proteins in the first three months of life only a little over 33 per cent. more frequent than in older infants (46 per cent.), but otherwise the same. Grave shock may occur. Premature infants also may be supersensitive.

Treatment of Intestinal Fistulas.—Fecher had good results in two cases of postoperative intestinal fistulas with introduction of cotton soaked in oil.

Dispensary for Lung Affections.—A special department of the Vienna Policlinic is devoted to the examination of children for pulmonary diseases. Peyrer publishes the results in 1,000 cases. The roentgen findings of a pleurisy or primary focus are reliable. Enlarged hilum shadows occur also in nontuberculous children.

Münchener medizinische Wochenschrift, Munich

72: 973-1014 (June 12) 1925

Treatment of Diabetes. R. Jaksch-Wartenhorst.—p. 973.
Action of Ions and Insulin in Dysoxidative Carbonuria. A. Bickel and O. Kauffmann-Cosla.—p. 976.
Subcutaneous and Intracutaneous Introduction of Insulin. J. Fritz.—p. 976.
*The Sperma and Artificial Fecundation. Mettenleiter.—p. 977.
Breast Nursing Ability and Weight at Birth. R. Ganther and J. Schoedel.—p. 980.
*Syphilitic Changes of Organs. Gürich.—p. 980.
Buerker's Colorimeter. F. Lebermann.—p. 982.
Measuring Radiant Energy. H. Malten.—p. 985.
Sedimentation Test in Thermal Baths. Schneyer.—p. 986.
Treatment of Furuncles. J. Schütz.—p. 988.
Epidemics in Russia. H. Zeiss.—p. 991.
Medicolegal Obstetrics. VI. M. Hofmeier.—p. 992.
Exploratory Incision in Tumors. A. Krecke.—p. 994.
State Medicine in Bavaria. H. Schöppler.—p. 996.

The Sperm and Artificial Fecundation.—Mettenleiter made experiments on the action of various fluids on the spermatozoa. A buffered Ringer solution with addition of serum preserved them for 100 hours. He recommends in azoospermia from bilateral epididymitis to aspirate some sperm from the tail of the epididymis, mix it with a few drops of a 5 per cent. glucose solution, and inject 2-3 drops into the uterus. Artificial fecundation seems to have been used for the first time in 1322 by an Arabian who stole the sperma of a valuable horse.

Syphilitic Changes of Organs.—Gürich's necropsy statistics show that internal changes from syphilis are becoming much more frequent than the skin lesions.

Wiener klinische Wochenschrift, Vienna

38: 601-662 (June 6) 1925

Beginnings of Gynecology in Vienna. I. Fischer.—p. 601.
Uselessness of the Term "Metropathy." L. Adler.—p. 605.
Fundal Cervicovaginal Fistula. R. Bauer.—p. 607.
Hernias of Douglas' Pouch. J. Fabricius.—p. 608.
*Hemorrhages After Interventions on the Follicular Apparatus. J. Halban and R. Köhler.—p. 612.
*Infiltrations of Cheeks in the New-Born. H. Heidler.—p. 614.
*Changes in Menstruation Rhythm. R. Hofstätter.—p. 618.
Leukorrhea and Its Changes After Various Irrigations. H. Kamniker and A. L. Schmid.—p. 621.
*Prognosis of Labor. H. Katz.—p. 625.
*Micro-Abderhalden Reaction in Diagnosis of Abdominal Pregnancy. H. Katz and A. Szenes.—p. 629.
Surgery of Pelvic Inflammations. H. Keitler.—p. 631.
*Granular Colpitis. F. Kermauner.—p. 633.
*Acid and Alkaline Genital Secretion. Kraul and Bodnar.—p. 634.
*Uterine Scars in Pregnancy and Labor. H. Peham.—p. 637.
Nidation of Human Ovum. H. Peters.—p. 639.
*Hemostasis by External Manipulations. L. Piskaček.—p. 640.
Forceps. O. Pritzi.—p. 641.
Purulent Nephritis After Vagina-Ureter Fistulas. J. Schiffmann and L. Szamek.—p. 644.
*Calcium Content of Leukorrhea and Lochia. A. Szenes.—p. 648.
*Influence of Ovarian Function on Vaginal Content. H. Thaler.—p. 651.
Results in Cancer of Cervix. W. Weibel.—p. 656.
Treatment of Leukorrhea. P. Werner.—p. 660.

Hemorrhages After Intervention on the Follicular Apparatus.—Halban and Köhler observed uterine hemorrhage after opening ripe follicles in the ovary. The bleeding was not as strong as the menstruation induced by extirpation of the corpus luteum, and it did not modify the menstrual cycle as this latter intervention does. They believe that the premature opening of the follicle—before the granulosa is ripe enough to aid the remnants of the previous corpus in preventing the menstruation—causes the metrorrhagia. The follicle fluid stimulates the bleeding, which accounts for the menorrhagia in microcystic degeneration of the ovaries, with its precipitated rupture of the follicles.

Infiltrations of the Cheeks of the New-Born a Forceps Injury.—Heidler observed an infant with infiltrations in both cheeks, developing ten days after birth. W. Knöpfelmacher and N. Swoboda suggested forceps as a probable cause of this so-called sclerodermia of the new-born—especially because it heals without atrophy. He therefore examined carefully all the new-born infants and found similar infiltrations in a third of the forceps deliveries.

Spontaneous and Artificial Changes in Menstruation Rhythm.—Hofstätter discusses the various physical and mental injuries capable of inducing a menstruation which is followed after the typical interval by a new menstruation, thus changing the former rhythm. He believes that outside of the regular spontaneous ovulation, a provoked ovulation may also occur in women. It is even possible that a spontaneous ovulation occurs only when the ripening follicle did not burst because of lack of sufficiently strong irritants—usually of sexual nature. He does not believe that the corpus luteum produces or inhibits menstruation. Several follicles may burst during one menstrual cycle. He thinks that the significance of this phenomei [illegible] mic and mental life of women has been un [illegible] o.

**Distance Betw
in Prognosi**